MCQ Lecure 2

1. Metabolic transformations (phase 1) is: *a) acetylation & methylation of substances* *b) transformation of substances due to oxidation, reduction, hydrolysis* *c) glucuronide formation* *d) binding to plasma proteins*	**B**
2. Conjugation: *a) Process of drug reduction by special enzymes* *b) Process of drug oxidation by special oxidases* *c) Coupling of a drug with an endogenous substrate* *d) Solubilization in lipids* *e) Unionization of drugs*	**C**
3. Which of the following reactions is phase II elimination of drug? *a) Glucuronidation* *b) Oxidation* *c) Hydrolysis* *d) Ionization* *e) Reduction*	**A**
4. Stimulation of microsomal enzymes can: *a) Require the dose increase of some drugs* *b) Require the dose decrease of some drugs* *c) Prolong the duration of the action of a drug* *d) Intensify the unwanted reaction of a drug* *e) Potentiate the efficacy of drugs*	**A**

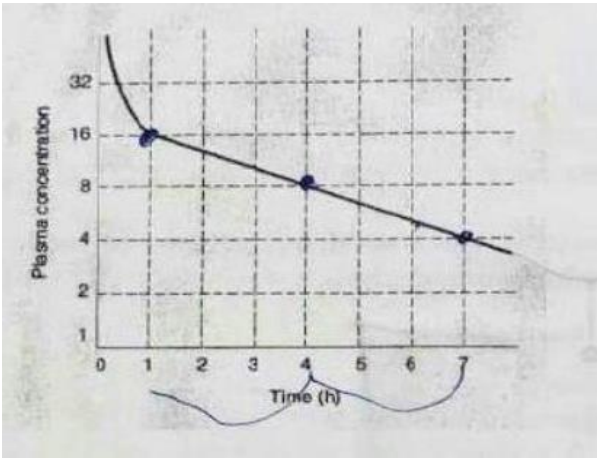
5. Loading dose of a drug is given: *a) To achieve steady state concentration in short time* *b) For drugs with short half life* *c) For drugs with long half life* *d) To reduce complications* *e) When the drug eliminated by first order kinetic*	**A**
6. The loading dose of a drug is governed by its: *a) Renal clearance* *b) Plasma half-life* *c) Volume of distribution* *d) Elimination rate constant*	**C**
7. About biotransformation. Untrue is: *a) inactive metabolites are formed* *b) active metabolites are formed* *c) generally more fat-soluble metabolites are formed* *d) generally more water-soluble metabolites are formed* *e) toxic metabolites are formed*	**C**
8. To be excreted from the system ……drugs need to be made water soluble, ……..is oxidation / reduction/hydrolysis,……. is conjugation with glucuronide /sulphate : *a) Lipophilic, phase I, phase II* *b) Hydrophilic, phase I,phase II* *c) Lipophobic, phase II, phase I* *d) Lipolytic, phase I, phase II* *e) Lipophilic ,phase II,phase I*	**A**

9. A pro-drug is: *a) The protype member of a class of drugs* *b) The oldest member of a class of drugs* *c) An inactive drug that is transformed in the body to an active metabolite* *d) A drug that is stored in the body tissues and then gradually released in the circulation*	**C**
10. Which of the following types of drug metabolizing enzymes are inducible: *a) Microsomal enzymes* *b) Non-microsomal enzymes.* *c) Bothe microsomal and non-microsomal enzymes* *d) Mitochondrial enzymes.*	**A**
11. Gentamicin, an aminoglycoside antibiotic, is sometimes given in intermittent intravenous bolus doses of 100 mg 3 times a day to achieve target peak plasma concentrations . Your patient, however, is found to have a creatinine clearance one third of normal. What should your modified dosage regimen for this patient be? *a) 20 mg 3 times a day* *b) 33 mg 3 times a day* *c) 72 mg 3 times a day* *d) 100 mg 2 times a day* *e) 150 mg 2 times a day*	**B**
13. As regards drug absorption one of the following statements is wrong: *a) Large molecule is less absorbed than small molecule* *b) Dose and concentration of the drug can increase rate of absorption* *c) Lipid soluble drugs are more easily absorbed* *d) Acidic drugs are more absorbed at the intestine* *e) Vasoconstrictor drug decrease the rate of absorption*	**D**

14. The volume of distribution (Vd) relates: *a) Single to a daily dose of an administrated drug* *b) An administrated dose to a body weight* *c) An uncharged drug reaching the systemic circulation* *d) The amount of a drug in the body to the concentration of a drug in plasma*	***D***
15. Biotransformation of the drugs is to render them: *a) Less ionized* *b) More pharmacologically active* *c) More lipid soluble* *d) Less lipid soluble*	***D***
16. Pick out the right statement: *a) Microsomal oxidation always results in inactivation of a compound* *b) Microsomal oxidation results in a decrease of compound toxicity* *c) Microsomal oxidation results in an increase of ionization and water solubility of a drug* *d) Microsomal oxidation results in an increase of lipid solubility of a drug thus its excretion from the organism is facilitated*	***C***
17.Medication A is administered in a 100 mg daily dose orally and 60 mg of the drug is absorbed from the gastrointestinal tract unchanged. Thus, the bioavailability of Medication A is: *a) 50%* *b) 60%* *c) 70%* *d) 80%* *e) 90%*	***B***

18. Diazepam must cross the blood-brain barrier to be effective. Which of the following characteristics would help a drug molecule cross this barrier? *a) Hydrophilicity* *b) Large size* *c) Lipid solubility* *d) Weak acid with pka of 4* *e) Weak base with pKa of 9*	**C**
19. Drug administered through the following route is most likely to be subjected to first-pass metabolism: *a) Oral* *b) Sublingual* *c) Subcutaneous* *d) Rectal*	***A***
20. High plasma protein binding: *a) Increases volume of distribution of the drug* *b) Facilitates glomerular filtration of the drug* *c) Minimizes drug interactions* *d) Generally makes the drug long acting*	***D***
21. Drugs which undergo high degree of first-pass metabolism in liver: *a) Have low oral bioavailability* *b) Are excreted primarily in bile* *c) Are contraindicated in liver disease* *d) Exhibit zero order kinetics of elimination*	***A***

22. Which of the following is a phase II drug-metabolizing reaction? *a) Acetylation* *b) Deamination* *c) Hydrolysis* *d) Oxidation* *e) Reduction*	***A***
23. 400mg of a drug is administered to a patient and the drug is later measured in plasma to be 1 ug/ml. what is the apparent volume of distribution (Vd)? *a) 0.04 L* *b) 0.4 L* *c) 40 L* *d) 400 L* *e) 4000 L*	***D***
24. All of the following biotransformation reactions are phase II except: *a) Glucuronidations* *b) Acetylations* *c) Reductions* *d) Methylations* *e) Glutathione conjugation*	***C***
25. Half life of a drug may be helpful to determine: *a) Elimination of drug* *b) Level of absorption* *c) Rate of absorption through GIT* *d) Time to reach steady state concentration* *e) Distribution into body system*	***D***

26. A new drug was administered intravenously, and its plasma levels were measured for several hours. It was concluded that the drug has first-order kinetics. *From this graph, what is the best estimate of the elimination half-life?* *a. 0.5 h b. 1 h c. 3 h d. 4 h e. 7 h*  	**C**
28. What percentage of steady-state drug concentration is achieved after 4 half- life (t ½)? *a) 20 %* *b) 25%* *c) 50%* *d) 94%* *e) 75%*	***D***
29. A drug with a half-life of 10 hours is administered by continuous intravenous infusion. Which of the following best approximates the time for the drug to reach steady state? *a) 10 hours* *b) 20 hours* *c) 33 hours* *d) 40 hours* *e) 60 hours*	***D***

30. At 6 h after IV administration of bolus dose, the plasma level of a drug is 5 mg/L. If the Vd = 10 L and the elimination half-life = 3 h, what was the dose administered? *A. 100 mg* *B. 150 mg* *C. 180 mg* *D. 200 mg* *E. 540 mg*	***D***
31. Which statement is accurate for the drug shown in the example below? ***100 mg 2hr → 50 mg 2hr → 25 mg 2hr → 12.5 mg*** *A. The rate of elimination is constant* *B. The elimination half-life varies with the dose* *C. The volume of distribution varies with the dose* *D. The clearance varies with the dose* *E. The rate of elimination varies directly with the dose*	***E***
32.A 16-year-old male high school football player takes 800 mg of ibuprofen after morning practice for a sore knee. Ibuprofen has a half-life of about 2 h. What percentage of the original plasma load of ibuprofen will remain in his blood when afternoon practice starts in 4 h? *(A) 0%* *(B) 12.5%* *(C) 25%* *(D) 50%* *(E) 75%*	***C***
33. When the same dose of a drug is repeated at half-life intervals, the steady-state (plateau) plasma drug concentration is reached after: *A. 2–3 half lives* *B. 4–5 half lives*	***B***

C. 6–7 half lives *D. 8–10 half lives*	
34. For a drug such as piroxicam with a 40-hour half- life and being dosed once daily i.e. (every 24 hours), steady state will be reached shortly following which DOSE (not which half-life)? *a. 1st dose* *b. 3rd dose* *c. 5th dose* *d. 8th dose*	***D***
35. Half-life of a drug may be helpful to determine: *a) Elimination of the drug* *b) Level of absorption.* *c) Rate of absorption through gastrointestinal tract* *d) Inter-dosage interval.* *e) Distribution into body systems*	***D***
36. Biotransformation of a medicinal substance results in: *A) faster urinary excretion* *B) slower urinary excretion* *C) easier distribution in organism* *D) higher binding to membranes* *E) higher efficacy.*	***A***

37. A patient requires an infusion of procainamide. Its half-life is 2 hrs. The infusion is begun at 9 to 11 AM on the same day, the blood concentration is found to be 3 mg/L. What is the probable steady state concentration after 2 days of infusion? *A) 3 mg/L* *B) 4 mg/L* *C) 5 mg/L* *D) 6 mg/L* *E) 15 mg/L*	***D***
38. A drug following first order kinetics is being administered by constant i.v. infusion at a rate of 10 mg/min. Its steady state plasma concentration is 3 mg/dl. If the dose rate is increased to 20 mg/dl, what will be the new steady state plasma concentration? *a) 6 mg/dl* *b) 4 mg/dl* *c) 3 mg/dl* *d) 9 mg/dl* *e) 5 mg/dl*	***A***
39. The clearance of drug means : *a) Volume of plasma which is cleared of drug in unit of time.* *b) Amount of drug excreted in urine.* *c) Amount of drug metabolized in unit of time.* *d) Amount of drug cleared by liver in bile in unit time.* *e) Amount of drug cleared by both liver and kidney.*	***A***

40. What percentage of the steady-state drug concentration is achieved after 3 half-life t (½)? a) *20%* b) *87%* c) *50%* d) *94%* e) *75%.*	***B***
41. A patient require an infusion of procainamide , its half life is 2 hrs. The infusion started at 9 AM to 1 PM on the same day. The blood concentration is found to be 3mg/L. what is the probable steady state concentration after 2 days of infusion ? a) *3mg/L* b) *4mg/L* c) *6mg/L* d) *15mg/L* e) *5mg/L*	***B***
42. Half-life of a drug may be helpful to determine : a) *Elimination of the drug* b) *Level of absorption.* c) *Rate of absorption through the GIT* d) *Time to reach Cpss* e) *Distribution into the body system*	***d***

43. With IV infusion, a drug reaches 50% of its final steady state in 24 hours. The elimination half-life of the drug must be about: *a) 2 h* *b) 12 h* *c) 6 h* *d) 24 h* *e) 30 h.*	***D***
44. The plasma half-life (t ½) of drugs: *a) Is expressed as the percentage that remains ½ hour after administration* *b) Will be short if the drugs get into the enterohepatic circulation* *c) Cannot be calculated if the drug is excreted through the bile* *d) Is constant for drugs having zero-order elimination* *e) can be prolonged by showing the rate of drug elimination*	***E***
45. With IV infusion, a drug reaches 50% of its final steady state in 12 hours. The elimination half-life of the drug must be about: *a) 2 h* *b) 12 h* *c) 6 h* *d) 24 h* *e) 30 h*	***B***
46. A patient was given a 200 mg dose of a drug IV, and 100 mg was eliminated during the first 2 hours. of the drug follows first-order elimination kinetics, how much of the drug will remain 6 hours after its administration? *a) 25mg* *b) 50mg* *c) 75mg* *d) 100mg*	***a***

47. What percentage of the steady-state drug concentration is achieved after 4 half-lives? a) *20%* b) *25%* c) *50%* d) *94%* e) *75%*	***d***
48. If a drug is known to be distributed into total body water, what dose (mg) is need to obtain an initial plasma level of 5 mg/l in a patient weighing 70 kg? a) *210* b) *150* c) *110* d) *50* e) *35*	***A***

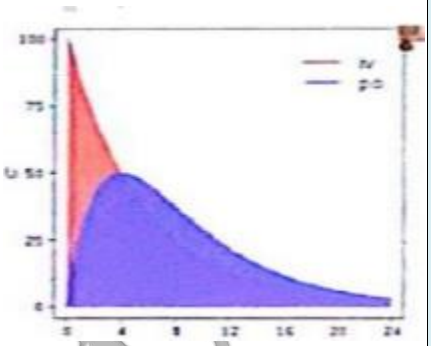
PHARMACOKINETICS

Q1	**A pro-drug is:** a) The prototype member of a class of drugs b) The oldest member of a class of drugs c) An inactive drug that is transformed in the body to an active metabolite d) A drug that is stored in the body tissues and then gradually released in the circulation	C
Q2	**The bioavailability of a drug:** a) Is a defined as the actual blood concentration required to produce a pharmacological effect b) Will be unaffected by changes in formulation c) May be affected by liver damage d) Must be 100% for a drug given by mouth and is completely absorbed Is a term applied only to oral administration	C
Q3	**Drugs that are highly bound to albumin:** a) Effectively cross BBB b) Are easily filtered at the glomerulus c) Have a large Vd d) Often contain quaternary nitrogen e) Can undergo competition with other drugs for albumin binding sites	E
Q4	**One of the following could decrease drug absorption:** a) Increased surface area dedicated to absorption b) b) Increased blood flow to the site of administration c) c) Increased bioavailability d) d) Increased lipid solubility e) e) Increased Ph when the drug is a weak acid	E

Q5	**One of the following bioavailability is assumed to be for IV dosage?** **a) 0%** b) 25% c) 50% d) d) 75% e) e) 100%	E
Q6	**To be excreted from the system …… drugs need to be made water soluble …… is oxidation / reduction/hydrolysis , …… is conjugation with glucuronide I sulphate** a) Lipophilic , phase I, phase II b) Hydrophilic , phase , phase II c) Lipophobic , phase II , phase I d) Lipolytic, phase I, phase II e) Lipophilic ,phase II ,phase I	A
Q7	**Weak acids are excreted faster in ……. urine and weak bases are excreted faster in ……. urine :** a) Acidic : alkaline b) Alkaline : acidic c) Acidic : neutral d) Neutral : alkaline e) Alkaline : neutra	B
Q8	**If a drug is known to be distributed into total body water, what dose (mg) is need to obtain an initial plasma level of 5 mg/l in a patient weighing 70 kg?** a) 210 b) 150 c) 110 d) 50 e) 35	A

Q9	**Which of the following would be the likely result of a decrease in urinary Ph?** a) Decreased urinary excretion of a weak base b) increased urinary excretion of weak acid c) c) increased urinary excretion of a weak base d) d) decreased urinary excretion of a non-ionized drug e) increase urinary e) excretion of a completely ionized drug	C
Q10	**The rate of urinary excretion of acidic drug such as aspirin and barbiturates is increased by:** a) Administration of sodium bicarbonate b) Administration of ammonium chloride c) Administration of ascorbic acid d) Keeping the urine at natural PH	A
Q11	**Which of the following drugs , tend to be ionized in breast milk and thus ,** **become trapped inside it?** a) Amphetamine (pka = 9.9) b) Phenobarbitone (pka = 7.9) c) Warfarin (pka = 5) d) Aspirin (pka = 3.5) e) Ampicillin (pka = 2.5)	A
Q12	**Which of the following is the amount of a drug absorbed to systemic circulation per the amount administered?** a) Bioavailability b) Bioequivalence c) Drug absorption d) Dosage e) Distribution	A
Q13	**Predominant form of Aspirin in the stomach is :** a) ionized b) non ionized	B

Q14	**Gentamycin an animal glycoside antibiotic , is sometimes given to intermittent intravenous bolus doses of 100 mg 3 times a day to achieve target peak plasma concentration of about 5mg/l gentamycin's clearance (normally 5.41/h/70kg) is almost entirely by glomerular filtration . your patient , however, is found to have creatinine clearance 30% normal. what should your modified dosage regimes for this patient be?** a) 20mg 3 times a day b) 33mg 3 times a day c) 72mg 3 times a day d) 100 mg 2 times a day e) 150 mg 3 times a day	B
Q15	**Which of the following parameters is used to define the relation between the desired therapeutic effect and the toxic effect?** a) Potency b) Intrinsic activity c) Therapeutic index d) Efficacy e) Bioavailability	C
Q16	**A drug that binds to a receptor and produces a biological response that mimics the response to the endogenous ligand is known as:** a) Agonist b) Antagonist c) Functional antagonist d) partial agonist e) Partial antagonist	A
Q17	**In presence of pentazocine, a higher concentration of morphine is required to elicit full pain relief. Pentazocine by itself has a smaller analgesic effect than does morphine, even at the highest dose. Which Of the following is Correct regarding these medications?** a) Morphine is a full agonist, and pentazocine partial agonist. b) Pentazocine a competitive antagonist. c) Morphine is less effective than is pentazocine. d) Morphine is less potent than is pentazocine.	A

Q18	**Identical doses of a drug are given orally and intravenously. We plot the data shown here: Further analysis of only these data will allow you to determine which of the following?** a) Elimination route(s) b) Extent of plasma protein binding c) Oral bioavailability d) Potency e) Therapeutic effectiveness 	C
Q19	**For which of the following drugs is excretion most significantly accelerated by acidification of the urine ?** a) Weak acid with pka of 5.5 b) Weak acid with pka of 3.5 c) Weak base with pka of 7.5 d) Weak base with pka of 7.1 e) weak base with pka of 8.1	E
Q20	**About biotransformation untrue is :** a) Active metabolites are formed b) Generally more fat soluble metabolites are formed c) Generally more H2O soluble metabolites are formed d) Toxic metabolites can be formed.	B
Q21	**Drugs that are administered IV are:** a) Rapidly absorbed b) b) Subject to first-pass metabolism c) c) 100% bioavailable d) d) Rapidly excreted by the kidneys e) e) Rapidly metabolized by the liver	C
Q22	**Stimulation of microsomal enzymes can:** a) Require the dose increase of some drugs b) b) Require the dose decrease of some drugs c) c) Prolong the duration of the action of a drug d) Intensify the unwanted reaction of a drug e) e) Potentiate the efficacy of drugs	A

Q23	**A decrease in renal and liver function, as seen in the elderly, would prolong drug half-life, …….plasma protein binding, and ……volume of distribution.** a) Increase; Increase b) Decrease; Decrease c) Increase; Decrease d) Decrease; Increase	D
Q24	**The bioavailability of a drug:** a) Is defined as the actual blood concentration required to produce a pharmacological effect b) Will be unaffected by changes in formulation c) May be affected by liver damage d) Must be 100% for a drug given by mouth and is completely absorbed e) Is a term applied only to oral Administration	C
Q25	**Normally, gentamicin has a Vd = 20L and Cl = 80 mL/min. If gentamicin was administered to a patient with 50% renal function, what parameter would differ from normal?** a) Loading dose would be higher b) Maintenance dose would be lower c) t $\frac{1}{2}$ would be shorter d) Vd would be 35L e) Cl would be 700 mL/min	B
Q26	**X is a drug that is extensively bound to plasma proteins. If you give therapeutic dose to a person with sever hypoalbuminemia which one of the following effects would you expect to occur:** a) A great than normal (possibly toxic) response to the drug b) A longer duration of action c) A slower onset of action d) No effect of drug X at all e) A drug effect completely different from what normally occur	A

Q27	**About biotransformation. Untrue is:** a) inactive metabolites are formed b) b) active metabolites are formed c) c) generally more fat-soluble metabolites are formed d) d) generally more water-soluble metabolites are formed e) e) toxic metabolites are formed	C
Q28	**The loading dose of a drug is governed by its:** a) Renal clearance b) Plasma half-life c) Volume of distribution d) Elimination rate constant	C
Q29	**Loading dose of a drug is given:** a) To achieve steady state concentration in short time b) For drugs with short half life c) For drugs with long half life d) To reduce complications e) When the drug eliminated by first order kinetic	A
Q30	**For calculating the volume of distribution (Vd) one must consider:** a) concentration of a substance in plasma b) concentration of a substance in urine c) therapeutic width of drug action d) a daily dose of drug e) intrinsic activity of the drug	A
Q31	**What organ is responsible for metabolism in 1st pass metabolism?** a) Brain b) Kidney c) Spleen d) heart e) Liver	E

Q32	**Bioavailability is the fraction or percentage of administered drug that reaches the systemic circulation via a given route as compared to what route?** a) Oral b) IV c) SC d) CSE e) IM	B
Q33	**Bioavailability is:** a) Plasma protein binding of a substance b) Permeability through the BBB c) Fraction of a drug reaching the systemic circulation following any route administration d) Amount of a substance in urine relative to initial dose e) Presystemic degradation of a drug	C
Q34	**Which of the following reactions is phase Il elimination of drug?** a) Glucuronidation b) Oxidation c) Hydrolysis d) Ionization e) Reduction	A
Q35	**Conjugation:** a) Process of drug reduction by special enzymes b) Process of drug oxidation by special oxidases c) Coupling of a drug with an endogenous substrate d) Solubilization in lipids d) Unionization of drugs	C
Q36	**Metabolic transformations (phase 1) is:** a) acetylation & methylation of substances b) transformation of substances due to oxidation, reduction, hydrolysis c) glucuronide formation d) binding to plasma proteins	B

Q37	**MS. Smith, a 65-year-old woman with pneumonia, was given Tobramycin antibiotic, 150mg, iv. After 20 minutes, the plasma concentration was measured & was found to be 3mg/L. Assuming no elimination of the drug in 20 minutes, what is the apparent volume of distribution of Tobramycin in MS. Smith?** a) 3L/min b) 3L c) 50L d) 7L e) 0.1mg/min	C
Q38	**Which of the following will be the likely result of a decrease in urinary PH?** a) decreased urinary excretion of a weak base b) increased urinary excretion of a weak acid c) increased urinary excretion of a weak base	C
Q39	**Which of the following drugs will be absorbed to the least extent in the stomach?** a) Ampicillin (pka=25) b) Aspirin (pKa=3.5) c) Warfarin (pKa=5) d) Phenobarbital (pKa=7.9) e) Amphetamine (pka=9.9)	E
Q40	**pharmacokinetics include:** a) Localization of the drug b) mechanism of drug action c) excretion of substances d) interaction of substances e) the effect of drug on body control system	C
Q41	**A hydrophilic (water-soluble) medicinal agent has the following property:** a) low ability to penetrate through the cell membrane lipids b) penetrates through membranes by means of endocytosis c) easy permeation through the BBB	A

	d) high reabsorption in renal tubules	
Q42	**Which of the following types of drug metabolizing enzymes are inducible:** a) Microsomal enzymes b) Non-microsomal enzymes. c) Bothe microsomal and non-microsomal enzymes d) Mitochondrial enzymes	A
Q43	**For which of the following drugs is excretion most significantly accelerated by acidification of the urine ?** a) Weak acid with pka of 5.5 b) Weak acid with pka of 3.5 c) Weak base with pka of 7.5 d) Weak base with pka of 7.1	C

1. If a patient gives history of urticarial, itching and swelling of lips following injection of Penicillin G, which of the following statement is true? *a) He will NOT develop similar reaction whenever penicillin is injected* *b) He can be given ampicillin safely* *c) He can be given oral phenoxmethyl penicillin safely* *d) All natural and semisynthetic penicillins are contraindication for him*	
2. Choose the semisynthetic penicillin which has an extended spectrum of activity against many gram negative bacilli, is acid resistant but NOT penicillinase resistant: *a) Cloxacillin* *b) Amoxicillin* *c) Penicillin V* *d) Pipracillin* *e) Benzathine penicillin*	
3. The drug of choice for atypical pneumonia due to mycoplasma pneumonia is: *a) Doxycycline* *b) Ampicillin* *c) Ceftriaxone* *d) Gentamicin* *e) Pipracillin*	
4. The following drug may cure typhoid fever, but does not prevent development of carrier state: *a) Ciprofloxacin* *b) Cotrimoxazole* *c) Chloramphenicol* *d) Ceftriaxone* *e) Amoxicillin*	

5. Ethambutol is not used in children below 6 years of age because: *a) Young children are intolerant to ethambutol* *b) Ethambutol causes growth retardation in young children* *c) It is difficult to detect ethambutol induced visual impairment ill young children* *d) in young children visual toxicity of ethambutol is irreversible* *e) Ethambutol causes renal damage*	
6. A diabetic patient is diagnosed to have a septicemia due to E. coli. Since this organism tends to be resistant to ampicillin. One of the following would you select to effectively treat this patient: *a) Erythromycin* *b) Clindamycin* *c) Chloramphenicol* *d) Doxycycline* *e) Ceftriaxone (3rd generation cephalosporin)*	
7. One of the following drugs inhibits bacterial protein synthesis, preventing the translocation step via its interaction with the 50s ribosomal subunit: *a) Clindamycin* *b) Centamycin* *c) Vancomycin* *d) Imipenem* *e) Tetracycline*	

8. A 65-year-old-male with pneumonia has a sputum culture that is positive for a staphylococcal strain that is B-lactamase positive. One of the following is the best choice of penicillin therapy in this patient: *a) Ampicillin* *b) Oxacillin* *c) Ticardllill* *d) Penicillin* *e) Cabenicillin*	
9. In a patient who has an established hypersensitivity to metronidazole. One of the following is the most appropriate drug to use for management of pseudomembranous colitis: *a) Ampicillin* *b) Clindamycin* *c) Doxycycline* *d) Ofloxacin* *e) Vancomycin*	
10. In the treatment of a urinary tract infection in a patient known to have a deficiency of glucose-6-phosphate dehydrogenase, it would not be advisable to prescribe one of the following: *a) Ciprotloxacin* *b) Amoxicillin* *c) Cephalexin* *d) Doxycycline* *e) Sulfamethoxazole*	

11. The presence of severe renal failure requires adjustment of the doses of one of the following antibiotics:

a) Doxycycline B) Tobramycin

c) Chloramphenicol D) Erythromycin

e) Cefoperazone

12. A 3-year -old girl presents to the emergency department with a history of recurrent UTI with costovertebral angle tenderness, high fever and dysuria. A urine culture grows gram-negative lactose-fermenting rods. The physician suspects E. coli pyelonephritis. Ciprofloxacin is highly effective against E. c oliin vitro, but the physician chooses not to us e it in this case. Why would he choose not to prescribe ciprofloxacin?

a) Ciprofloxacin is bacteriostatic, not bactericidal

b) Ciprofloxacin is contraindicated in patients younger than 18 years old

c) Ciprofloxacin is effective against E-coli in vitro but not in vivo

d) Ciprofloxacin is nephrotoxic and should not be used to treat kidneys infections

e) The physician should prescribe ciprofloxacin in this case

13. A 34-year-old patient with HIV disease complains of a productive cough with hemoptysis and night sweet. A sputum smear is positive for acid-fast bacilli. He is placed in isolation and started on isoniazide, rifampicin, pyrazinamide and ethambutol. A few months later, he complains of a loss of his ability to discriminate certain colors. What causing his vision impairment?

a) Ethambutol

b) Isoniazide

c) Miliary TB

d) Pyrazinamide

e) Rifampicin

14. Which of the following antibiotics may cause hearing loss?

a) *Amoxicillin*

b) *Ciprofloxacin*

c) *Erythromycin*

d) *Doxycycline*

e) *Streptomycin*

E

15. Cilastatin blocks which of the following enzymes to i increase imipenem ' efficacy?

a) *Bacterial efflux pump*

b) *CYP3A4*

c) *Dieptidase*

d) *Organic anion transporter*

e) *Penicillinase*

C

16. Clarithromycin and erythromycin has very similar spectra of antimicrobial activity. The major advantage of clarithromycin is that it:

a) *Does not inhibit hepatic drug metabolism enzymes*

b) *Eradicates mycoplasmal infection i n a single dose*

c) *Has greater activity against H. pylori*

d) *is active against methicillin -resistant strains of staphylococci*

e) *Is active against strains of streptococci that resistant to erythromycin*

C

17. Highest incidence of antibiotic associated pseudomembranous enterocolitis has been noted with the use of:

a) *Ampicillin*

b) *Chloramphenicol*

c) *Vancomycin*

d) *Clindamycin*

e) *Gentamycin*

d

18. One of the following antibiotics effectively treats variety of causative organisms for bacterial pneumonia and also works at the 50s ribosomal subunit: *a) Azithromycin* *b) Ceftriaxone* *c) Doxycycline* *d) Ofloxacin* *e) Clindamycin*	
19. In the treatment of a urinary tract infection in a patient known to have a deficiency of glucose-6-phosphate dehydrogenas e, I t would NOT be advisable to prescribe one of the following: *a) Ciprofloxacin* *b) Amoxicillin* *c) Cephalexin* *d) Doxycycline* *e) Sulfamethoxazole*	
20. In a patient who has an established hypersensitivity to metronidazole. What is the most appropriate drug to use for the management of pseudomembranous colitis: *a) Ampicillin* *b) Clilldamycin* *c) Doxycycline* *d) Ofloxacill* *e) Vancomycin*	

21. One of the following penicillins is preferred to treat staphylococcal infections :

a) *Penicillin V*
b) *Penicillin G*
c) *Dicloxacillin*
d) *Amoxicillin*
e) *Ampicillin*

C

22. Which of the following has a similar antibacterial spectrum to penicillin G:

a) *Chloramphenicol*
b) *Oxytetracyclin*
c) *Erythromycin*
d) *Nalidixic acid*
e) *Amikacin*

C

23. Red orange urine can result from :

a) *Rifampicin*
b) *Erythromycin*
c) *Streptomycin*
d) *Cefopyrazone*
e) *Ofloxacin*

A

24. Development of pseudomembranous colitis is a major adverse effect of therapy with:

a) *Vancomycin*
b) *Clindamycin*
c) *Gentamycin*
d) *Streptomycin*
e) *Amikacin*

B

25. Treatment of methicillin resistant staph aureus (MRSA) infection :

a) Vancomycin

b) Metronidazole

c) Benzylpenicillin

d) Flucloxacillin

e) Chloroquine

26. One of the following pairs is not correctly matched?

a) Amilloglycosides - congenital deafness

b) Chloramphenicol - gray baby syndrome

c) Sulfonamide - steven-johnson syndrome

d) Vancomycin - red neck syndrome

e) Macrolides - crystalluria

27. The first line drug for treatment of giardiasis is :

a) Oxytetracyclin

b) Sofosbuvir

c) Metronidazole

d) Primquine

e) Vancomycin

f) Thrombotic complications

28. A 75-year-old woman is hospitalized for pneumonia and treated with an intravenous drug. On day three, she develops severe diarrhea. Stool is positive for clostridium difficile toxin. What is the best treatment?

a) Clindamycin

b) Cefaclor

c) Metronidazole

d) Erythromycin

e) Doxycycline

29. Which of the following statements about aminoglycoside antibiotic is Not true?

a) Synergize with B-lactam antibiotics

b) Are dependent on the kidney for excretion

c) Are orally effective

d) Require dose adjustment in patient with renal failure

30. In the treatment of infections caused by pseudomonas aeruginosa, the antimicrobial agent that has proved to be effective is :

a) Penicillin G

b) Piperacillin

c) Nafcillin

d) Erythromycin

e) Tetracycline

31. The use of chloramphenicol may result in:

a) Bone marrow stimulation

b) Phototoxicity

c) Aplastic anemia

d) Staining of teeth

e) Alopecia

32. Metronidazole has which of the following properties EXCEPT?

a) Elective against a wide variety of anaerobic bacteria

b) Produces a disulfiram-like effect upon the ingestion of ethanol

c) Contraindicated in the first trimester of pregnancy

d) Accumulation occurs so that the total dose during one course of therapy has an upper limit

e) Effective against giardia infestations

33. Which of the following may cause damage to growing cartilage?

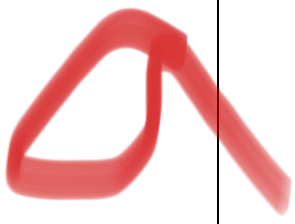
a) Fluroquinolones

b) Sulfonamides

c) Aminoglycosides

d) Cephalosporins

e) Tetracyclines



34. Ampicillin and amoxicillin are in the same group of penicillins. Which of the following statements best characterizes amoxicillin?

a) I t has better oral absorption than dose ampicillin

b) It can be used in penicillinas e - producing organism

c) It is classified a sabroad- spectrum penicillin

d) It does not cause hypersensitivity reactions

e) It is effective against pseudomonas

35. The quinolone derivative that is most effective against pseudomonas:

a) Norfloxacin

b) Ciprofloxacin

c) Ofloxacin

d) Enoxacin

36. All of the following antibiotics would be effective in treating an infection due to B-lactamase producing staphylococci:

a) Cefoperazone

b) Benzyl penicillin

c) Cloxacillin

d) Vancomycin

e) Clilldamycin

37. Tetracycline is contraindicated in which of the following conditions :

a) *Renal failure*
b) *Hepatic coma*
c) *Pregnancy*
d) *Osteomyelitis*
e) *All of the above*

E

38. Combination of antimicrobials is Not useful in one of the following conditions :

a) *To potentiate or synergies drug action e.g. carbencillin with gentamicin for pseudomonal infection*
b) *To delay development of resistance e.g. in T.E.*
c) *Where treatment is essential before a diagnosis has been reached e.g. in emergency like suspected septicemia*
d) *In mixed infection as peritonitis following colon perforation*
a) *To reduce the risk of suppression of normal flora*

E

39. Following is a fourth-generation cephalosporin:

a) *Cefuroxime*
b) *Cefotaxime*
c) *Ceftazidine*
d) *Cefepime*
e) *Cephazolin*

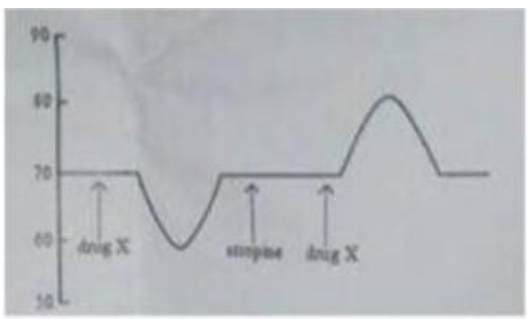
d

MCQ Lecure 6,7

1. Reflex tachycardia caused by the systemic administration of albuterol can be blocked by what drug? *a) Dobutamine* *b) Prazosin* *c) Phenylephrine* *d) Metoprolol* *e) Low-dose epinephrine*	***D***
2. Increasing the concentration of NE in adrenergic synapses leads to activation of: *a) Dopa decarboxylase* *b) Increased release of norepinephrine* *c) Activation of presynaptic Gi-coupled receptors* *d) Stimulation of MAO* *e) Activation of tyrosine hydroxylase*	***C***
3. Carvedilol is an effective antihypertensive agent that is capable of blocking beta receptors like Propranolol. An important difference between the two drugs is that carvedilol: *a) A selective blocker of cardiac 31 receptors* *b) Has intrinsic sympathomimetic activity* *c) Is available only as eye drops* *d) Has α1 receptor blocking action* *e) Stimulates β 1 receptors in bronchioles*	***D***

4. In a patient having hypertension, propranolol was given. Though the drug-controlled hypertension but it reduced resting heart rate to 50 bpm. Which of the following blockers can be used in this patient as an effective substitute which does not cause bradycardia? *a) Pindolol* *b) labetalol* *c) atenolol* *d) Bisoprolol*	***A***
5. An example of covalent drug receptor interaction is: *a) Noradrenaline binding to ß adrenergic receptor* *b) Acetylcholine binding to muscarinic receptor* *c) Prazosin binding to α adrenergic receptor* *d) Phenoxybenzamine binding to alpha adrenoreceptor*	***D***
6. Stimulation of beta 1 adrenergic receptors produce which of the following? *a) Dilatation of pupil.* *b) Relaxation of airway smooth muscles.* *c) GIT sphincter contractions.* *d) contraction of splenic capsule.* *e) secretion of renin from kidney.*	***E***
7. Which of the following(s) adrenergic receptors regulate noradrenaline secretion from adrenergic nerve fibers? *a) Alpha 1.* *b) Alpha 2.* *c) Beta 1.* *d) Beta 2.* *e) Beta 3.*	***B***

8. The principal process which terminates the action of noradrenaline released from adrenergic nerve ending is: *a) Degradation by MAO* *b) Methylation by COMT* *c) Axonal uptake* *d) Extra neuronal uptake* *e) Degradation by CYP450*	***C***
9. The following action of adrenaline is not mediated by B receptors: *a) Dilatation of blood vessels* *b) Dilatation of pupil* *c) Bronchodilation* *d) Renin release from kidney* *e) Tachycardia*	***B***
10. Which of the following is a selective α 1A receptor blocker that affords symptomatic relief in benign prostatic hypertrophy without producing significant fall in blood pressure? *a) Terazosin* *b) Doxazosin* *c) Trimazosin* *d) Tamsulosin* *e) prazosin*	***D***
11. Select the ultra-short acting cardio selective B adrenergic blocker *a) Bisoprolol* *b) Esmolol* *c) Timolol* *d) Sotalol* *e) Propranolol*	***B***

12.Which group or patients is mostly at risk for adverse effect of β 2-blockers? *a) Asthmatics* *b) Patients with congestive heart failure* *c) Traumatic patients* *d) Diabetics* *e) Patients with deep vein thrombosis (DVTS)*	**A**
13.60-year old man has a blood pressure of 160/100 mmHg and slightly enlarged prostate. Which of the following medications would be useful in treating both of these conditions? *a) Doxazocin* *b) Labetalal* *c) Phantolamine* *d) Propranolol* *e) Bethanechal*	**A**
14.Which of following drugs is preferred to be used to delay premature labor? *a) Dopomine /V* *b) Norepinephrine IV* *c) Ritodrine IV* *d) fioprenaline IV* *e) Dobutamine IV*	**C**
15.An intravenous injection of drug X was given before & after the administration of atropine, and the heart rate was recorded. The results was depicited below: Which of the following drugs is most likely drug X? *a) Epinephrine* *b) Norepinephrine* *c) Prazocin* *d) Albuterol* *e) Isoproterenol* 	**B**

16.Which of the following drugs will decrease heart rate in a patient with a normal heart but will have little or no effect heart rate is a cardiac transplant recipient? *a) Epinephrine* *b) oproterenol* *c) Narepinephrine* *d) Salmeteral* *e) Terbutaline*	**C**
17.The following is a selective alpha adrenoceptor antagonist: *a) Prazosin* *b) Pentolamine* *c) Yohimbine* *d) Clonidine* *e) Phenoxybenzomine*	**C**
18.Select the drug which affords faster and greater symptomatic relief in benign hypertrophy of prostate: *a) Tamsulosin* *b) Demopressin* *c) Finasteride* *d) Sildenafil* *e) Prazosin*	***A***
19.Which of the following actions of adrenaline would be blocked by phenoxybenzamine but not by propranolol? *a) Cardiac stimulation* *b) Contraction of the radial smooth muscle of the iris* *c) Increase renin secretion.* *d) Relaxation of bronchial amooth muscle.* *el Relaxation of the uterus*	***B***

20.One of the following receptor subtypes relaxes smooth muscle and causes liver glycogenalysis and gluconeogenesis: a. *α1* b. *α2* c. *β1* d. *β2* e. *β3*	***D***
21.A 32 year old man presents to his primary care physician t because of a 4-year-history of nasal stuffiness, cough and sinus pain. He is prescribed with phenylephrine, He must be aware of which of the following potential adverse effect: *a) Constipation* *b) Diarrhea* *c) Rhinorrhea* *d) Hypertension* *e) Tinnitus*	***D***
22.One of the following its storage acts by Increasing the release of norepinephrine from its storage sites: *a) Amphetomine* *b) Dopomine* *c) Phenylephrine* *d) Reserpine* *e) Clonidine*	***A***
23.One of the following is the most likely to occur with parenteral administration of an α1-agonist drug: *a) Hypotension* *b) Hypertension* *c) Tissue necrosis* *d) Vasodilation* *e) lipolysis.*	***B***

24.One of the following is MOST contraindicated for methyldopa: *a) Renal insufficiency* *b) Caronary insufficiency* *c) Mental depression* *d) Liver disease* *e) Asthma*	***C***
25.Epinephrine has all the action listed EXCEPT: *a) Raises systolic blood pressure* *b) Branchodilatation* *c) Contracts internal sphincter of bladder* *d) Stimulation of central nervous system* *e) increases salivation*	***E***
26.Catecholamine have all of the properties below except: *a) Highly polar* *b) Orally absorbed* *c) Short duration of action,* *d) Rapid metabolism* *e) Rapid onset of action*	***B***
27.Yohimbine is an antagonist of *a) a1 receptors* *b) a2 receptors* *c) B2 receptors* *d) Bath a1 and a2 receptors* *e) B1 receptors*	***B***

28. A 7-year-old boy has a significant bed-wetting problem. A long acting indirect sympathomimetic agent sometimes used by the oral route for this indication is:

a) Dobutamine

b) Ephedrine

c) Epinephrine

d) leoproterenol

e) Phenylephrine

B

29. Which of the following drugs is the drug of choice in anaphylaxis associated with bronchospasm and hypotension?

a) Epinephrine

b) Isoproterenol

c) Norepinephrine

d) Phenylephrine

e) Salmeterol

A

30. The effects of 4 drugs (#1-4) on mean BP administered individualy before and after prazosin.

Condition	Drug #1	Drug #2	Drug #3	Drug #4
Before prazosin	↑↑	↑↑	↓↓	↑
After prazosin	↑	↑	↓↓	↓

The order of drug #1 through drug #4 is best represented by :

a) Epinephrine-tyramine-isoproterenol-norepinephrine

b) Tyramine isoproterenol-norepinephrine epinephrine

c) Norepinephrine isoproterenol-epinephrine-tyramine

d) Isoproterenol-epinephrine-tyramine norepinephrine

e) Norepinephrine-tyramine-isoproterenol-epinephrine

31. Which of the following is correct regarding responses mediated by adrenergic receptors?

a) *Stimulation of α 1 receptors increases blood pressure*

b) *Stimulation of α 1 receptors reduces blood pressure*

c) *Stimulation of sympathetic presynaptic α 2 receptors increases norepinephrine release*

d) *Stimulation of β 2 receptors increases heart rate (tachycardia)*

e) *Stimulation of β 2 receptors causes bronchoconstriction*

A

32. Cardiovascular effects of a new drug (that activates autonomic receptors are shown in the table below

Parameter	Control	Drug X
Systolic BP	120 mm Hg	110 mm Hg
Diastolic BP	85 mm Hg	55 mm Hg
Heart rate	60/min	120/min

- ***The most probable receptor affinities of drug X are***

a) α1 , α 2

b) α 1 , α 2 , β 1

c) β 1 , β 2

d) α1

e) β 1

Sympathomimetics (L6)

1. A 7-year -old boy with a previous history of bee sting allergy is brought to the emergency department after being stung by 3 bees. If this child has signs of anaphylaxis, what is the treatment of choice? *a. Diphenhydramine (an antihistamine)* *b. Ephedrine* *c. Epinephrine* *d. Isoproterenol* *e. Methylprednisolone (a corticosteroid)*	**C**
2. you would note that β2 stimulants frequently cause? *a. Direct stimulation of renin release* *b. Hypoglycaemia* *c. Itching* *d. Skeletal muscle tremor* *e. Vasodilation in the skin*	***D***
3. Mr Green, a 54-year -old banker, had a cardiac transplant 6 months ago. His current blood pressure is 120/70 mm Hg and heart rate is 100 bpm. Which of the following drugs would have the least effect on Mr Green's heart rate? *a. Salbutamol* *b. Epinephrine* *c. Isoproterenol* *d. Norepinephrine* *e. Phenylephrine*	***E***

4. Which of the following drugs is considered selective beta 1 agonist? *a. Dobutamine* *b. Epinephrine* *c. Isoproterenol* *d. Norepinephrine* *e. Phenylephrine*	***A***
5. Which of the following drugs can be used in shock states ? *a. Epinephrine* *b. Isoproterenol* *c. Ephedrine* *d. Dopamine* *e. Phenylephrine*	***D***
6. Which of the following drugs has selective alpha 2 agonistic activity? *a. Epinephrine* *b. Clonidine* *c. Ephedrine* *d. Dopamine* *e. Phenylephrine*	***B***
7. Which of the following drugs is considered indirect sympathomimetic? *a. Epinephrine* *b. Clonidine* *c. Ephedrine* *d. Dopamine* *e. Amphetamine*	***E***

8. Which of the following sympathomimetic acts both direct & indirect? *a. Epinephrine* *b. Clonidine* *c. Ephedrine* *d. Dopamine* *e. Amphetamine*	**C**
9. Which of the following drugs can be injected by IV infusion to raise the BP? *a. Clonidine* *b. Isoprenaline* *c. Noradrenaline* *d. Salbutamol* *e. Salbutamol*	**C**
10. Which of the following drugs is a good choice when pupillary dilation—but not cycloplegia—is desired? *a. Isoproterenol* *b. Norepinephrine* *c. Phenylephrine* *d. Pilocarpine* *e. Tropicamide*	**C**

Sympatholytics (L7)

1. A patient is to receive epinephrine. She has previously received an adrenoceptor -blocking agent. Which of the following effects of epinephrine would be blocked by phentolamine but not by metoprolol? *a. Cardiac stimulation* *b. Increase of cAMP in fat* *c. Mydriasis* *d. Relaxation of bronchial smooth muscle* *e. Relaxation of the uterus*	**C**
2. Clinical studies have shown that adrenoceptor blockers have many useful effects in patients. However, a number of drug toxicities have been documented. Adverse effects that limit the use of adrenoceptor blockers include which one of the following? *a. Bronchoconstriction from α-blocking agents* *b. Acute heart failure exacerbation from β blockers* *c. Impaired blood sugar response with α blockers* *d. Increased intraocular pressure with β blockers* *e. Sleep disturbances from α-blocking drugs*	**B**
3. When given to a patient, phentolamine blocks which one of the following? *a. Bradycardia induced by phenylephrine* *b. Bronchodilation induced by epinephrine* *c. Increased cardiac contractile force induced by norepinephrine* *d. Miosis induced by acetylcholine* *e. Vasodilation induced by isoproterenol*	**A**

4. A 56-year -old man has hypertension and an enlarged prostate, which biopsy shows to be benign prostatic hyperplasia. He complains of urinary retention. Which of the following drugs would be the most appropriate initial therapy? *a. Albuterol* *b. Atenolol* *c. Metoprolol* *d. Prazosin* *e. Timolol*	***D***
5. Carvedilol is an effective antihypertensive agent that, like propranolol, is capable of blocking beta receptors. An important difference between the two drugs is that carvedilol? *a. Is a selective blocker of cardiac β1 receptors* *b. Has vasodilator effect* *c. Is available only as eye drops* *d. Has local anaesthetic effect* *e. Stimulates β2 receptors in bronchioles*	***B***
6. The β adrenergic blocker having β1 selectivity is: *a. Carvedilol* *b. Atenolol* *c. Propranolol* *d. Timolol*	***B***
7. The following disease is worsened by propranolol: *a. Glaucoma* *b. Benign prostatic hypertrophy* *c. Bronchial asthma* *d. Parkinsonism*	***C***

8. Which of the following is considered non selective alpha blocker? *a. Prazosin* *b. Yohimbine* *c. Phentolamine* *d. Tamsulosin* *e. Atenolol*	**C**
9. Which of the following side effects occur with prazosin? *a. Tachycardia* *b. Hypotension* *c. Urine retention* *d. Miosis* *e. Dry mouth*	**B**
10. Which of the following side effects NOT occur with propranolol? *a. Tachycardia* *b. Hypotension* *c. Bronchospasm* *d. Allergy* *e. Fatigue*	**A**
11. Which of the following drugs block alpha 2 selectively? *a. Prazosin* *b. Propranolol* *c. Phentolamine* *d. Yohimbine* *e. Phenoxybenzamine*	**D**

Written Pharma 13

1- Mention one drug used in treatment of myasthenia gravis and its MOA?

2- Mention MOA and side effect of physostigmine?

3- Compare () physostigmine and neostigmine?

4- Answer the following questions about this case scenario:

A 44 years old male farmer, unintentionally, inhaled the insecticide that he was spraying throughout the farm. When he began to suffer from wheezing severely, he was taken to the emergency room. The physician found certain manifestations and the diagnosis as insecticide (Organophosphorus) poisoning was confirmed.

A. List subtypes & sites of muscarinic receptors, Mention one agonist for them.

Muscarinic Receptors' Subtypes	Sites
1.	.....
2.	.....
3.	.....
4.	.....
5.	.....
Muscarinic Receptors' Agonist:	

B. List the manifestations of organophosphorus toxicity.

- Manifestations:

  .....

C. Name drug used with success to relieve the above manifestations and give the mechanism behind its use.

- Drug: .....
- Mechanism: .....

MCQ Pharma 13

1. Which of the following is the most appropriate in the treatment of organophosphorus poisoning? a) Morphine b) Atropine c) Physostigmine d) Aspirin	**B**
2. Which of the following is NOT an expected symptom of poisoning with Organophosphorus compound? a) Increased bronchial secretions b) Miosis c) Tachycardia d) Convulsions e) Bronchospasm	**C**
3. Neostigmine differs from pilocarpine in having effect on: a) Bladder tone. b) Bowel motility. c) Heart rate. d) Salivary gland. e) Skeletal muscle.	**E**
4. Which of the following is an expected symptom of poisoning with Organophosphorus compound? a) Dry mouth b) Mydriasis c) Tachycardia d) Constipation e) Bronchospasm	**E**

5. Which of the following drugs produce irreversible anti cholinesterase effect? a) Edrophonium b) Echothiophate c) Rivastigmine d) Tacrine e) Donepezil	**B**
6. Which of the following reversible cholinesterase inhibitors is used for atropine intoxication? a) Neostigmine b) Physostigmine c) Edrophonium d) Donepezil e) Pyridostigmine	**B**
7. AChE inhibitor used in the ttt of myasthenia gravis is: A. Bethanicol B. Neostigmine C. Pilocarpine D. Atropine E. Donepezil	**B**
8. The following statements about anti-ChE drugs are correct EXCEPT: A. Physostigmine lowers IOP B. Neostigmine may be used with atropine to treat myasthenia gravis C. Pyridostigmine have fewer visceral side effects than neostigmine. D. Rivastigmine can be used to treat paralytic ileus E. Edrophonium has short duration of action	**D**

. A central AChE inhibitor that is used to improve symptoms of Alzheimer's disease is: A. Pyridostigmine B. Edrophonium C. Donepezil D. Neostigmine E. Echothiophate	C
10. A short acting AChE inhibitor used in the diagnosis of myasthenia gravis is: A. Edrophonium B. Neostigmine C. Pyridostigmine D. Rivastigmine E. Donepezil	A
11. Which of the following drugs has the longest duration of AChE inhibition: A. Echothiophate B. Neostigmine C. Physostigmine D. Pyridostigmine E. Donepezil	A
12. Actions of acetylcholine on the heart are mediated through: (Lecture 12) a) Decrease cAMP b) Increase cAMP c) Decrease IP3 and DAG d) Increase IP3 and DAG e) Increase cGMP	A

13. Which of the following is a relatively cerebro-selective anti-cholinesterase found to afford symptomatic Alzheimer's disease? a) Donepezil b) Gemfibrozil c) Pyridostigmine d) Physostigmine e) Edrophonium	**A**
14. Neostigmine will effectively antagonize skeletal muscle relaxation produced by: a) Tubocurarine b) Succinylcholine c) Diazepanm d) Baclofen e) Nicotine	**A**
15. A patient requires mild cholinomimetic stimulant following surgery. Neostigmine and Bethanechol in moderate dose have significantly different effects on which of the following? a) Gastric secretion b) Neuromuscular blocker. c) Salivary glands. d) Sweat gland. e) Erection	**B**
16. One of the following is a very short-acting anti-cholinesterase: a) Neostigmine. b) Pyridostigmine. c) Edrophonium. d) Physostigmine e) Ambenonium	**C**

. One of the following drugs should be used to improve symptoms of Alzheimer's disease is: a) Pyridostigmine. b) Edrophonium. c) Rivestigmine d) Neostigmine. e) Echothiophate.	C
18. One of the following mechanisms do irreversible Ch.E inhibitors permanently bind to the esteratic site enzyme: a) Hydroxylation. b) Hydrolysis. c) Phosphorylation. d) Peptidation. e) Methylation	C
19. Which of the following is used to differentiate between myasthenia crisis and cholinergic crisis? a) Edrophonium b) Malathion. c) Physiostigmine. d) Pralidoxime. e) Pyridostigmine.	A
20. Which of the following drugs might a physician give as an antidote to atropine? (A) Dopamine (B) Epinephrine (C) Physostigmine (D) Pralidoxime (E) Scopolamine	C

21. A colleague with myasthenia gravis wants you to assist him to the ER because he is experiencing muscle weakness and has found it difficult to titrate his drug dosage because he has had the "flu." You note that he has a slight temperature, shallow respirations, and a gray-blue skin pallor. What would be the most appropriate drug to give to your colleague at this time?

B

A. Albuterol
B. Edrophonium
C. Propranolol
D. Physostigmine
E. Scopolamine

The table below shows the effects of three receptor activators on heart rate in anesthetized animals, administered as individual drugs and following pretreatment with one of four different receptor antagonists. The arrows denote the direction of effects on heart rate; the symbol (–) denotes no change from normal HR.

Antagonist Pretreatment	Agonist 1	Agonist 2	Agonist 3
None	↑	↓	↓
Atropine	↑	–	↑
Prazosin	↑	–	↑
Propranolol	–	↓	↓
Mecamylamine	↑	–	↑

B
D
C

Identify the agonist drugs from the following list:

22. Agonist 1
23. Agonist 2
24. Agonist 3

A. Acetylcholine
B. Low-dose epinephrine
C. Norepinephrine
D. Phenylephrine
E. Physostigmine

25. A crop duster pilot has been accidentally exposed to a high concentration of a highly toxic agricultural organophosphate insecticide. If untreated, the cause of death from such exposure would probably be: (A) Cardiac arrhythmia (B) Gastrointestinal bleeding (C) Heart failure (D) Hypotension (E) Respiratory failure	E
26. Mr Green has just been diagnosed with dysautonomia (chronic idiopathic autonomic insufficiency). You are considering different therapies for his disease. Pyridostigmine and neostigmine may cause which one of the following in this patient? (A) Bronchodilation (B) Cycloplegia (C) Diarrhea (D) Irreversible inhibition of acetylcholinesterase (E) Reduced gastric acid secretion	C
27. Which one of the following drugs has a very high affinity for the phosphorus atom in parathion and is often used to treat life-threatening insecticide toxicity? (A) Atropine (B) Benztropine (C) Bethanechol (D) Botulinum (E) Pralidoxime	E

28. A 62-year-old retired small business owner has had slowly increasing intraocular pressure bilaterally. You start him on drug used to treat his open-angle glaucoma, which also happens to cross the blood–brain barrier better than other drugs in its class. Which of the following drugs is this? (A) Echothiophate (B) Edrophonium (C) Neostigmine (D) Physostigmine (E) Pyridostigmine	**D**
29. Neostigmine is preferred over physostigmine for treating myasthenia gravis because: A. It is better absorbed orally B. It has longer duration of action C. It has additional direct agonistic action on nicotinic receptors at the muscle end plate D. It penetrates blood-brain barrier	**C**
30. Pralidoxime can reactivate cholinesterase enzyme that has been inactivated by: A. Carbamate anticholinesterases B. Organophosphate anticholinesterases C. Both carbamate and organophosphate anticholinesterases D. Reversible anticholinesterases	**B**
31. In the human eye, echothiophate causes which one of the following? (A) Ciliary muscle relaxation (B) Decrease in the incidence of cataracts (C) Increase in intraocular pressure (D) Mydriasis (E) Reversal of cycloplegia	**E**

32. Neostigmine: a. Has a shorter duration of action than edrophonium b. Decreases the acetylcholine concentration at the neuromuscular junction c. May result in bowel hypermotility, salivation, and sweating d. Exacerbates tubocurarine poisoning	C
33. Which one of the following drugs would be useful in the long-term treatment of myasthenia gravis: a. Edrophonium b. Atropine c. Neostigmine d. Bethanechol	C
1. Sildenafil is a medication primarily used for the treatment of: a) Hypertension b) Erectile dysfunction c) Asthma d) Diabetes	B
2. Sildenafil belongs to which class of drugs? a) Beta-blockers b) Antidepressants c) Phosphodiesterase type 5 inhibitors d) Statins	C
3. Sildenafil works by: a) Increasing blood pressure b) Stimulating the release of nitric oxide c) Blocking the action of adrenaline d) Inhibiting the production of cholesterol	B

4. Sildenafil is contraindicated in patients taking nitrates because it can: a) Increase the risk of bleeding b) Lead to liver damage c) Cause severe hypotension d) Induce seizures	C
5. Sildenafil should not be used in combination with which medication? a) Nitroglycerin b) Aspirin c) Antihistamines d) Antibiotics	A
6. Which of the following conditions is a contraindication for sildenafil use? a) Hypertension b) Diabetes c) Liver disease d) None of the above	C

LEVEL (1) - SEMESTER (2)

PHARMACOLOGY

PPPM

SCAN ME

MCQ LECTURE (1)

DR ELSAWY

MCQ

1) Which branch of pharmacology studies the way drugs work in living organism ? a. Pharmacotherapeutics b. Pharmacokinetics c. Pharmacogenetics d. Pharmacodynamics	**D**
2) What does 'pharmacokinetics' Include : a. Localization of drug action b. Mechanisms of drug action c. Absorption of drug d. Interaction of substances e. Side effect of drug on body control system	**C**
3) Receptors are protein macromolecules that: a) Combine with ligands and produce effects b) Block the action of agonists c) Inactivate enzymes d) Transport drugs across the cell membrane	**A**
4) Which type of bond between a receptor and a drug is strong but reversible? a) Ionic bond b) Hydrogen bond c) Covalent bond d) Van der Waals bond	**A**

5) Which type of bond between a receptor and a drug is very strong & irreversible? a) Ionic bond b) Hydrogen bond c) Covalent bond d) Van der Waals bond	**C**
6) Which type of bond between a receptor and a drug is weak and reversible? a) Ionic bond b) Hydrogen bond c) Covalent bond d) Van der Waals bond	**B**
7) Quantal response refers to a response that: a) Increases proportionally to the dose of the agonist b) Does not increase proportionally to the dose of the agonist c) Occurs only in the presence of an antagonist d) Occurs only in the presence of a carrier molecule	**B**
8) Which branch of pharmacology studies the way drugs work in living organism? a. Pharmacotherapeutics b. Pharmacokinetics c. Pharmacogenetics d. Pharmacodynamics	**D**

9) Receptors are ----- in nature a. Protein b. Lipid c. Steroid d. CHO	**A**
10) Which best describes graded dose-response curves? a) More precisely quantitated than quantal dose-response curves b) Obtainable from isolated tissue preparations but not from the study of intact subjects c) Used to determine the maximal efficacy of the drug d) Used to determine the therapeutic index of the drug	**C**
11) Which of the following provides information about the variation in sensitivity to the drug within the population studied? a) Maximal efficacy. b) Therapeutic index. c) Drug potency. d) Quantal dose-response curve.	**D**
12) Which of the following statements best describes quantal dose-response curves? A) More precisely quantitated than graded dose-response curves B) Obtainable from the study of intact subjects but not from isolated tissue preparations C) Used to determine the maximal efficacy of the drug D) Used to determine the variation in sensitivity of subjects to the drug	***D***

13) Graded and quantal dose-response curves are being used for evaluation of new antiasthmatic drug in the animal laboratory and in clinical trials. Which of the following statements best describes quantal dose-response curves? a. Used to determine the variation in sensitivity of subjects to the drug b. Used to determine the minimum efficacy of the drug c. Adrenaline effect on heart measured by quantal curve d. Obtainable from the study of intact subjects but not from isolated tissue preparations	**A**
14) Receptors are: a) Protein b) Small molecules c) Lipid d) Carbohydrates	**A**
15) Ligands are: a) Activators of receptors only b) Inhibitors of receptors only c) Molecules that bind to receptors d) Molecules that destroy receptors	**C**
16) Agonists are ligands that: a) Activate receptors b) Inhibit receptors c) Bind to receptors but have no effect d) Block receptors	**A**
17) Antagonists are ligands that: a) Activate receptors b) Inhibit receptors c) Bind to receptors but have no effect d) Block receptors	**D**

18) Ion channel-linked receptors are: a) Receptors that activate ion channels b) Receptors that bind to ions c) Receptors that are located in the nucleus d) Receptors that are activated by G-proteins	**A**
19) G-protein-linked receptors activate: a) Enzymes b) Ion channels c) Second messenger systems d) DNA transcription	**C**
20) Quantal response refers to a response that: a) Increases proportionally with the dose of the drug b) Occurs in some individuals c) Is all-or-none, either present or absent d) Varies between different animal species	**C**
21) Which of the following best describes drug affinity for a receptor? a) The ability of a drug to activate a receptor b) The ability of a drug to bind to a receptor c) The ability of a drug to block a receptor d) The ability of a drug to metabolize a receptor	**B**
22) Which type of receptor is involved in DNA transcription and gene expression? a) Ion channel-linked receptor b) G-protein-linked receptor c) Tyrosine kinase receptor d) Intracellular receptor	**D**

Sympathomimetics

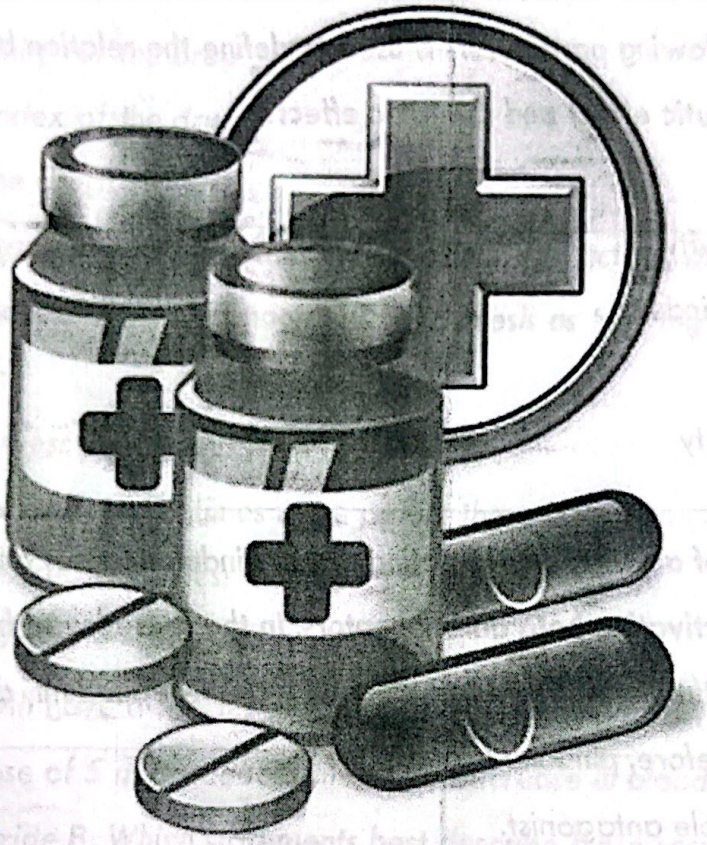
Q1	**Which of the following drugs is considered selective beta 1 agonist?** a. Dobutamine b. Epinephrine c. Isoproterenol d. Norepinephrine e. Phenylephrine	A
Q2	**Which of the following drugs can be used in shock states ?** a. Epinephrine b. Isoproterenol c. Ephedrine d. Dopamine e. Phenylephrine	D
Q3	**A 7-year -old boy with a previous history of bee sting allergy is brought to the emergency department after being stung by 3 bees. If this child has signs of anaphylaxis, what is the treatment of choice?** a. Diphenhydramine (an antihistamine) b. Ephedrine c. Epinephrine d. Isoproterenol e. Methylprednisolone (a corticosteroid)	C
Q4	**Which of the following drugs has selective alpha 2 agonistic activity?** a. Epinephrine b. Clonidine c. Ephedrine d. Dopamine e. Phenylephrine	B

Q5	**Mr. Green, a 54-year -old banker, had a cardiac transplant 6 months ago. His current blood pressure is 120/70 mm Hg and heart rate is 100 bpm. Which of the following drugs would have the least effect on Mr Green's heart rate?** a. Salbutamol b. Epinephrine c. Isoproterenol d. Norepinephrine e. Phenylephrine	E
Q6	**Which of the following drugs can be injected by IV infusion to raise the BP?** a. Clonidine b. Isoprenaline c. Noradrenaline d. Salbutamol e. Salbutamol	C
Q7	**Which of the following drugs is considered indirect sympathomimetic?** a. Epinephrine b. Clonidine c. Ephedrine d. Dopamine e. Amphetamine	E
Q8	**Which of the following sympathomimetic acts both direct & indirect?** a. Epinephrine b. Clonidine c. Ephedrine d. Dopamine e. Amphetamine	C

Q9	**Your 30-year -old patient has moderately severe new onset asthma, and you prescribe a highly selective β2 agonist inhaler to be used when needed. In considering the possible drug effects in this patient, you would note that β2 stimulants frequently cause?** a. Direct stimulation of renin release b. Hypoglycaemia c. Itching d. Skeletal muscle tremor e. Vasodilation in the skin	D
Q10	**A 65-year -old woman with impaired renal function and a necrotic ulcer in the** **sole of her right foot is admitted to the ward from the emergency department. She has long-standing type 2 diabetes mellitus and you wish to examine her retinas for possible vascular changes. Which of the following drugs is a good choice when pupillary dilation—but not cycloplegia—is desired?** a. Isoproterenol b. Norepinephrine c. Phenylephrine d. Pilocarpine e. Tropicamide	C

PHARMACOLOGY

LEVEL ❶
SEMESTER ❶ BLOCK ❷



MCQ LECTURE (3)

DR/ M.M

MCQ Lecure 3

1. A drug that binds to a receptor and produces a biological response that mimics the response to the endogenous ligand is known as: a) Agonist b) Antagonist c) Functional antagonist d) partial agonist e) Partial antagonist	A
2. Which of the following parameters is used to define the relation between the desired therapeutic effect and the toxic effect? a) Potency b) Intrinsic activity c) Therapeutic index d) Efficacy e) Bioavailability	C
3. In the absence of any ß-receptor acting drugs, pindolol causes an Increase in heart rate by activating beta adrenoceptors. In the presence of highly effective beta stimulants, however, pindolol a dose-dependent, decrease in heart rate. Therefore, pindolol Is probably: a) An Irreversible antagonist. b) physiologic antagonism c) chemical antagonist. d) A partial agonist. e) A Spare receptor agonist.	D

4. If 10 mg of naproxen produces the same analgesic response as 100 mg of ibuprofen, which of the following statements is correct? a) Naproxen is more efficacious than is ibuprofen. b) Naproxen is more potent than ibuprofen. c) Naproxen is a full agonist, and ibuprofen is a partial agonist. d) Naproxen is a competitive antagonist. e) Naproxen is a better drug to take for pain relief than is ibuprofen.	**B**
5. Which of the following factors will determine the number of drug receptor complexes formed: a) Efficacy of the drug. b) Receptor affinity for the drug. c) Therapeutic index of the drug. d) Half-life of the drug.	**B**
6. Two diuretic drugs have the same mechanism of diuretic action. Drug (A) in a dose of 5 mg produces the same magnitude of diuresis as 500 mg of drug (B). This suggests that: a) Drug (B) is less efficacious than drug (A). b) Drug (A) is about 100 times more potent than drug (B). c) Toxicity of drug (A) is less than that of drug (B). d) Drug (A) is a safer drug than drug (B). e) Drug (A) will have a shorter duration of action than drug (B).	**B**
7. Thiazide A in a dose of 5 mg produces the same decrease in blood pressure as 500 mg of thiazide B. Which statements best describe these results? a. Thiazide A is more efficacious than thiazide B b. Thiazide A is about 100 times more potent than thiazide B c. Toxicity of thiazide A is less than that of thiazide B d. Thiazide A has a wider therapeutic window than thiazide B e. Thiazide A has a longer half-life than thiazide B	**B**

8. When a drug has a steep dose-response curve, this means: a) The drug is lethal. b) The drug is expensive. c) The drug is efficacious. d) The drug is safe. e) Minimal change in the dose can lead to dramatic effect.	**E**
9. Graded and quantal dose-response curves are being used for evaluation of a new antihistamine drug in the animal laboratory and in clinical trials. Which of the following statements best describes quantal dose-response curves? A) More precisely quantitated than graded dose-response curves B) Obtainable from the study of intact subjects but not from isolated tissue preparations C) Used to determine the maximal efficacy of the drug D) Used to determine the variation in sensitivity of subjects to the drug	**D**
10. A 47-year-old woman who has been diagnosed with bipolar disorder needs a refill on her lithium prescription. She also has hypertension that is well controlled with an ACE inhibitor. Lithium has a narrow therapeutic index. Which of the following describes a narrow therapeutic index? A) The chance of toxicity is remote at the therapeutic dose B) The ratio of TD50 to ED50 equals 1 C) The ratio of TD50 to ED50 is less than 1 D) The therapeutic dose approaches the toxic dose E) The therapeutic dose is much greater than the toxic dose	**D**
11. The phrase "ability to bind to a receptor" fits the definition of A) Agonist B) Efficacy C) Antagonist D) Potency E) Affinity	**E**

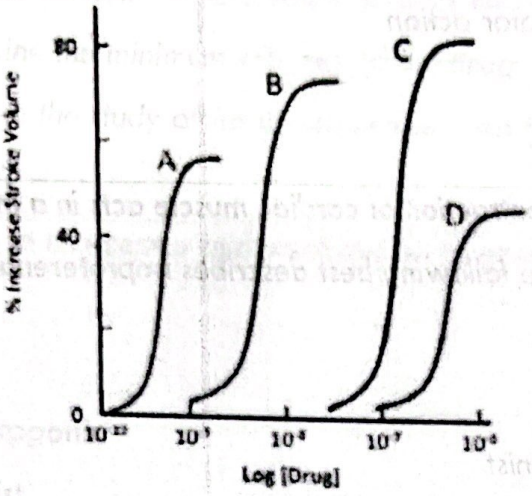
12. Which of the following describes an agonist? a) Any substance that brings about a change in biologic function through its chemical action b) A specific regulatory molecule in the biologic system where a drug interacts c) A drug that binds to a receptor and stimulates cellular activity. d) A drug that binds to a receptor and inhibits or opposes cellular activity e) A drug directed at parasites infecting the patient	**C**
13. A new vasopressor in development, Drug X, is a partial agonist at α1 adrenergic receptors. Epinephrine is a full agonist at these same receptors. Which of the following statements is true regarding the potency of Drug X compared to epinephrine? a) Drug X and epinephrine are equally potent because they act on the same receptor b) Drug X is more potent because it is a partial agonist c) Epinephrine is more potent because it is a full agonist d) Epinephrine is more potent because it is an endogenous transmitter e) Relative potency cannot be determined from the information given	**E**
14. Partial agonist has a) Partial affinity and efficacy b) Affinity And partial efficacy. c) Efficacy and partial affinity d) Neither affinity nor efficacy	**B**
15. Placebo is a chemical substance which has a) Affinity and efficacy b) Affinity And no efficacy c) Efficacy and no affinity d) Neither affinity nor efficacy	**D**

16. Graded and quantal dose-response curves are being used for evaluation of a new antiasthmatic drug in the animal laboratory and in clinical trials. Which of the following statements best describes quantal dose-response curves? a. Used to determine the variation in sensitivity of subjects to the drug b. Adrenaline effect on heart measured by quantal curve c. Used to determine the minimum efficacy of the drug d. Obtainable from the study of intact subjects but not from isolated tissue preparations	A
17. A drug that binds to a receptor and produces no response: a) Agonist b) Antagonist c) Functional antagonist d) Partial agonist e) Partial antagonist	B
18. In presence of pentazocine, a higher concentration of morphine is required to elicit full pain relief. Pentazocine by itself has a smaller analgesic effect than does morphine, even at the highest dose. Which of the following is correct regarding these medications? a) Morphine is a full agonist, and pentazocine partial agonist. b) Pentazocine is a competitive antagonist. c) morphine is less effective than is pentazocine d) morphine is less potent than is pentazocine	A
19. Which branch of pharmacology studies the way drugs work in living organism? a. Pharmaco-therapeutics b. Pharmaco-kinetics c. Pharmaco-genetics d. Pharmaco-dynamics	D

20. **Which of the following provides information about the largest response a drug can produce, regardless of dose?** a) Drug Potency b) Maximal efficacy c) Mechanism of receptor action d) Therapeutic index e) Therapeutic window	**B**
21. **Isoproterenol-induced contraction of cardiac muscle acts in a manner like epinephrine. Which of the following best describes isoproterenol?** a) Full agonist b) Partial agonist c) Competitive antagonist d) Irreversible antagonist e) Inverse agonist	**A**
22. **Which of the following is true of receptor action of a drug:** a) An antagonist has both efficacy and affinity for receptor b) An antagonist has affinity but no efficacy for receptor c) A partial antagonist has no efficacy or affinity for receptor d) Intrinsic activity and affinity are not important for drug action e) An antagonist has affinity and efficacy	**B**
23. **Which of the following statement is correct?** a) A If 10 mg of drug A produces the same response as 100mg of drug B, drug A is more effective than B b) The greater the efficacy the greater the potency of a drug c) In selecting a drug, potency is usually more important than efficacy. d) A competitive antagonist increases the ED50. e) Variation in response to a drug among different individuals is most likely to occur with a drug showing a large therapeutic index	**D**

24. **Dose response data was collected during the preclinical testing of four drugs for the treatment of acute heart failure, Which drug studied was the most :**

- *Efficacious .....*
- *Potent .....*



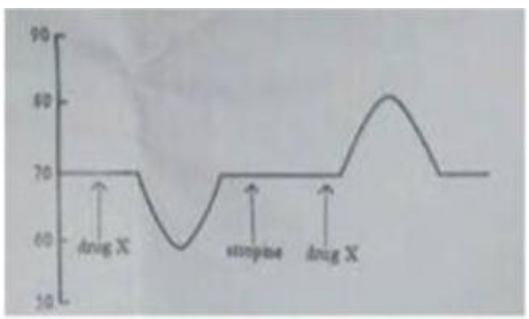
C & A

MCQ Lecure 6,7

1. Reflex tachycardia caused by the systemic administration of albuterol can be blocked by what drug? *a) Dobutamine* *b) Prazosin* *c) Phenylephrine* *d) Metoprolol* *e) Low-dose epinephrine*	***D***
2. Increasing the concentration of NE in adrenergic synapses leads to activation of: *a) Dopa decarboxylase* *b) Increased release of norepinephrine* *c) Activation of presynaptic Gi-coupled receptors* *d) Stimulation of MAO* *e) Activation of tyrosine hydroxylase*	***C***
3. Carvedilol is an effective antihypertensive agent that is capable of blocking beta receptors like Propranolol. An important difference between the two drugs is that carvedilol: *a) A selective blocker of cardiac 31 receptors* *b) Has intrinsic sympathomimetic activity* *c) Is available only as eye drops* *d) Has α1 receptor blocking action* *e) Stimulates β 1 receptors in bronchioles*	***D***

4. In a patient having hypertension, propranolol was given. Though the drug-controlled hypertension but it reduced resting heart rate to 50 bpm. Which of the following blockers can be used in this patient as an effective substitute which does not cause bradycardia? *a) Pindolol* *b) labetalol* *c) atenolol* *d) Bisoprolol*	***A***
5. An example of covalent drug receptor interaction is: *a) Noradrenaline binding to ß adrenergic receptor* *b) Acetylcholine binding to muscarinic receptor* *c) Prazosin binding to α adrenergic receptor* *d) Phenoxybenzamine binding to alpha adrenoreceptor*	***D***
6. Stimulation of beta 1 adrenergic receptors produce which of the following? *a) Dilatation of pupil.* *b) Relaxation of airway smooth muscles.* *c) GIT sphincter contractions.* *d) contraction of splenic capsule.* *e) secretion of renin from kidney.*	***E***
7. Which of the following(s) adrenergic receptors regulate noradrenaline secretion from adrenergic nerve fibers? *a) Alpha 1.* *b) Alpha 2.* *c) Beta 1.* *d) Beta 2.* *e) Beta 3.*	***B***

8. The principal process which terminates the action of noradrenaline released from adrenergic nerve ending is: *a) Degradation by MAO* *b) Methylation by COMT* *c) Axonal uptake* *d) Extra neuronal uptake* *e) Degradation by CYP450*	***C***
9. The following action of adrenaline is not mediated by B receptors: *a) Dilatation of blood vessels* *b) Dilatation of pupil* *c) Bronchodilation* *d) Renin release from kidney* *e) Tachycardia*	***B***
10. Which of the following is a selective α 1A receptor blocker that affords symptomatic relief in benign prostatic hypertrophy without producing significant fall in blood pressure? *a) Terazosin* *b) Doxazosin* *c) Trimazosin* *d) Tamsulosin* *e) prazosin*	***D***
11. Select the ultra-short acting cardio selective B adrenergic blocker *a) Bisoprolol* *b) Esmolol* *c) Timolol* *d) Sotalol* *e) Propranolol*	***B***

12.Which group or patients is mostly at risk for adverse effect of β 2-blockers? *a) Asthmatics* *b) Patients with congestive heart failure* *c) Traumatic patients* *d) Diabetics* *e) Patients with deep vein thrombosis (DVTS)*	**A**
13.60-year old man has a blood pressure of 160/100 mmHg and slightly enlarged prostate. Which of the following medications would be useful in treating both of these conditions? *a) Doxazocin* *b) Labetalal* *c) Phantolamine* *d) Propranolol* *e) Bethanechal*	**A**
14.Which of following drugs is preferred to be used to delay premature labor? *a) Dopomine /V* *b) Norepinephrine IV* *c) Ritodrine IV* *d) fioprenaline IV* *e) Dobutamine IV*	**C**
15.An intravenous injection of drug X was given before & after the administration of atropine, and the heart rate was recorded. The results was depicited below: Which of the following drugs is most likely drug X? *a) Epinephrine* *b) Norepinephrine* *c) Prazocin* *d) Albuterol* *e) Isoproterenol* 	**B**

16.Which of the following drugs will decrease heart rate in a patient with a normal heart but will have little or no effect heart rate is a cardiac transplant recipient? *a) Epinephrine* *b) oproterenol* *c) Narepinephrine* *d) Salmeteral* *e) Terbutaline*	**C**
17.The following is a selective alpha adrenoceptor antagonist: *a) Prazosin* *b) Pentolamine* *c) Yohimbine* *d) Clonidine* *e) Phenoxybenzomine*	**C**
18.Select the drug which affords faster and greater symptomatic relief in benign hypertrophy of prostate: *a) Tamsulosin* *b) Demopressin* *c) Finasteride* *d) Sildenafil* *e) Prazosin*	***A***
19.Which of the following actions of adrenaline would be blocked by phenoxybenzamine but not by propranolol? *a) Cardiac stimulation* *b) Contraction of the radial smooth muscle of the iris* *c) Increase renin secretion.* *d) Relaxation of bronchial amooth muscle.* *el Relaxation of the uterus*	***B***

20.One of the following receptor subtypes relaxes smooth muscle and causes liver glycogenalysis and gluconeogenesis: a. *α1* b. *α2* c. *β1* d. *β2* e. *β3*	***D***
21.A 32 year old man presents to his primary care physician t because of a 4-year-history of nasal stuffiness, cough and sinus pain. He is prescribed with phenylephrine, He must be aware of which of the following potential adverse effect: *a) Constipation* *b) Diarrhea* *c) Rhinorrhea* *d) Hypertension* *e) Tinnitus*	***D***
22.One of the following its storage acts by Increasing the release of norepinephrine from its storage sites: *a) Amphetomine* *b) Dopomine* *c) Phenylephrine* *d) Reserpine* *e) Clonidine*	***A***
23.One of the following is the most likely to occur with parenteral administration of an α1-agonist drug: *a) Hypotension* *b) Hypertension* *c) Tissue necrosis* *d) Vasodilation* *e) lipolysis.*	***B***

24.One of the following is MOST contraindicated for methyldopa: *a) Renal insufficiency* *b) Caronary insufficiency* *c) Mental depression* *d) Liver disease* *e) Asthma*	***C***
25.Epinephrine has all the action listed EXCEPT: *a) Raises systolic blood pressure* *b) Branchodilatation* *c) Contracts internal sphincter of bladder* *d) Stimulation of central nervous system* *e) increases salivation*	***E***
26.Catecholamine have all of the properties below except: *a) Highly polar* *b) Orally absorbed* *c) Short duration of action,* *d) Rapid metabolism* *e) Rapid onset of action*	***B***
27.Yohimbine is an antagonist of *a) a1 receptors* *b) a2 receptors* *c) B2 receptors* *d) Bath a1 and a2 receptors* *e) B1 receptors*	***B***

28. A 7-year-old boy has a significant bed-wetting problem. A long acting indirect sympathomimetic agent sometimes used by the oral route for this indication is:

a) Dobutamine

b) Ephedrine

c) Epinephrine

d) leoproterenol

e) Phenylephrine

B

29. Which of the following drugs is the drug of choice in anaphylaxis associated with bronchospasm and hypotension?

a) Epinephrine

b) Isoproterenol

c) Norepinephrine

d) Phenylephrine

e) Salmeterol

A

30. The effects of 4 drugs (#1-4) on mean BP administered individualy before and after prazosin.

Condition	Drug #1	Drug #2	Drug #3	Drug #4
Before prazosin	↑↑	↑↑	↓↓	↑
After prazosin	↑	↑	↓↓	↓

The order of drug #1 through drug #4 is best represented by :

a) Epinephrine-tyramine-isoproterenol-norepinephrine

b) Tyramine isoproterenol-norepinephrine epinephrine

c) Norepinephrine isoproterenol-epinephrine-tyramine

d) Isoproterenol-epinephrine-tyramine norepinephrine

e) Norepinephrine-tyramine-isoproterenol-epinephrine

31. Which of the following is correct regarding responses mediated by adrenergic receptors?

a) *Stimulation of α 1 receptors increases blood pressure*

b) *Stimulation of α 1 receptors reduces blood pressure*

c) *Stimulation of sympathetic presynaptic α 2 receptors increases norepinephrine release*

d) *Stimulation of β 2 receptors increases heart rate (tachycardia)*

e) *Stimulation of β 2 receptors causes bronchoconstriction*

A

32. Cardiovascular effects of a new drug (that activates autonomic receptors are shown in the table below

Parameter	Control	Drug X
Systolic BP	120 mm Hg	110 mm Hg
Diastolic BP	85 mm Hg	55 mm Hg
Heart rate	60/min	120/min

- ***The most probable receptor affinities of drug X are***

a) α1 , α 2

b) α 1 , α 2 , β 1

c) β 1 , β 2

d) α1

e) β 1

Sympathomimetics (L6)

1. A 7-year -old boy with a previous history of bee sting allergy is brought to the emergency department after being stung by 3 bees. If this child has signs of anaphylaxis, what is the treatment of choice? *a. Diphenhydramine (an antihistamine)* *b. Ephedrine* *c. Epinephrine* *d. Isoproterenol* *e. Methylprednisolone (a corticosteroid)*	**C**
2. you would note that β2 stimulants frequently cause? *a. Direct stimulation of renin release* *b. Hypoglycaemia* *c. Itching* *d. Skeletal muscle tremor* *e. Vasodilation in the skin*	***D***
3. Mr Green, a 54-year -old banker, had a cardiac transplant 6 months ago. His current blood pressure is 120/70 mm Hg and heart rate is 100 bpm. Which of the following drugs would have the least effect on Mr Green's heart rate? *a. Salbutamol* *b. Epinephrine* *c. Isoproterenol* *d. Norepinephrine* *e. Phenylephrine*	***E***

4. Which of the following drugs is considered selective beta 1 agonist? *a. Dobutamine* *b. Epinephrine* *c. Isoproterenol* *d. Norepinephrine* *e. Phenylephrine*	***A***
5. Which of the following drugs can be used in shock states ? *a. Epinephrine* *b. Isoproterenol* *c. Ephedrine* *d. Dopamine* *e. Phenylephrine*	***D***
6. Which of the following drugs has selective alpha 2 agonistic activity? *a. Epinephrine* *b. Clonidine* *c. Ephedrine* *d. Dopamine* *e. Phenylephrine*	***B***
7. Which of the following drugs is considered indirect sympathomimetic? *a. Epinephrine* *b. Clonidine* *c. Ephedrine* *d. Dopamine* *e. Amphetamine*	***E***

8. Which of the following sympathomimetic acts both direct & indirect? *a. Epinephrine* *b. Clonidine* *c. Ephedrine* *d. Dopamine* *e. Amphetamine*	**C**
9. Which of the following drugs can be injected by IV infusion to raise the BP? *a. Clonidine* *b. Isoprenaline* *c. Noradrenaline* *d. Salbutamol* *e. Salbutamol*	**C**
10. Which of the following drugs is a good choice when pupillary dilation—but not cycloplegia—is desired? *a. Isoproterenol* *b. Norepinephrine* *c. Phenylephrine* *d. Pilocarpine* *e. Tropicamide*	**C**

Sympatholytics (L7)

1. A patient is to receive epinephrine. She has previously received an adrenoceptor -blocking agent. Which of the following effects of epinephrine would be blocked by phentolamine but not by metoprolol? *a. Cardiac stimulation* *b. Increase of cAMP in fat* *c. Mydriasis* *d. Relaxation of bronchial smooth muscle* *e. Relaxation of the uterus*	**C**
2. Clinical studies have shown that adrenoceptor blockers have many useful effects in patients. However, a number of drug toxicities have been documented. Adverse effects that limit the use of adrenoceptor blockers include which one of the following? *a. Bronchoconstriction from α-blocking agents* *b. Acute heart failure exacerbation from β blockers* *c. Impaired blood sugar response with α blockers* *d. Increased intraocular pressure with β blockers* *e. Sleep disturbances from α-blocking drugs*	**B**
3. When given to a patient, phentolamine blocks which one of the following? *a. Bradycardia induced by phenylephrine* *b. Bronchodilation induced by epinephrine* *c. Increased cardiac contractile force induced by norepinephrine* *d. Miosis induced by acetylcholine* *e. Vasodilation induced by isoproterenol*	**A**

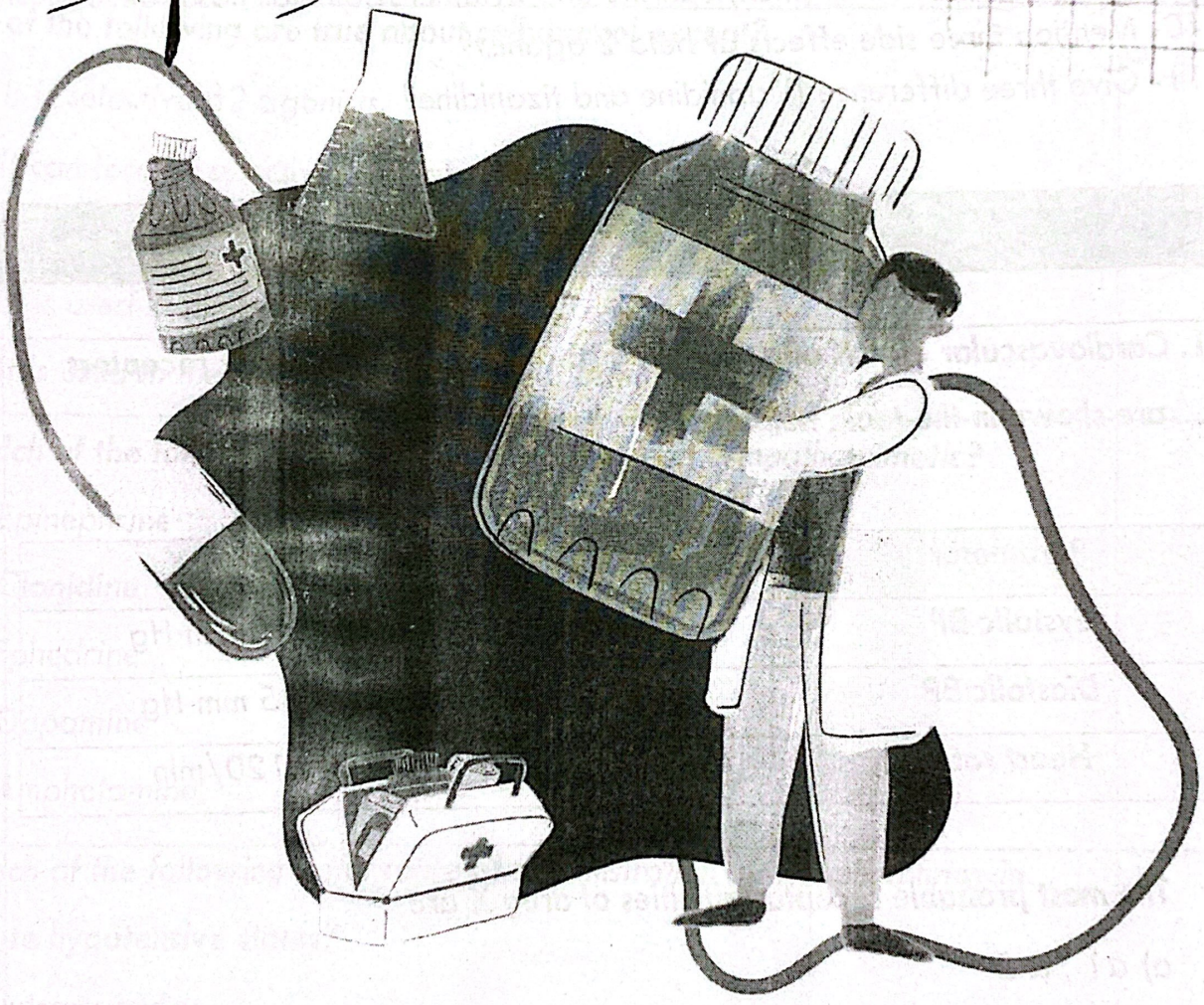
4. A 56-year -old man has hypertension and an enlarged prostate, which biopsy shows to be benign prostatic hyperplasia. He complains of urinary retention. Which of the following drugs would be the most appropriate initial therapy? *a. Albuterol* *b. Atenolol* *c. Metoprolol* *d. Prazosin* *e. Timolol*	***D***
5. Carvedilol is an effective antihypertensive agent that, like propranolol, is capable of blocking beta receptors. An important difference between the two drugs is that carvedilol? *a. Is a selective blocker of cardiac β1 receptors* *b. Has vasodilator effect* *c. Is available only as eye drops* *d. Has local anaesthetic effect* *e. Stimulates β2 receptors in bronchioles*	***B***
6. The β adrenergic blocker having β1 selectivity is: *a. Carvedilol* *b. Atenolol* *c. Propranolol* *d. Timolol*	***B***
7. The following disease is worsened by propranolol: *a. Glaucoma* *b. Benign prostatic hypertrophy* *c. Bronchial asthma* *d. Parkinsonism*	***C***

8. Which of the following is considered non selective alpha blocker? *a. Prazosin* *b. Yohimbine* *c. Phentolamine* *d. Tamsulosin* *e. Atenolol*	**C**
9. Which of the following side effects occur with prazosin? *a. Tachycardia* *b. Hypotension* *c. Urine retention* *d. Miosis* *e. Dry mouth*	**B**
10. Which of the following side effects NOT occur with propranolol? *a. Tachycardia* *b. Hypotension* *c. Bronchospasm* *d. Allergy* *e. Fatigue*	**A**
11. Which of the following drugs block alpha 2 selectively? *a. Prazosin* *b. Propranolol* *c. Phentolamine* *d. Yohimbine* *e. Phenoxybenzamine*	**D**

LEVEL 1 - SEMESTER 2

PHARMACOLOGY

فِلسطين 2024



MCQ 8+9

Adrenergic Agonists

DR. M.M.

Written on L8,9

1- Mention 4 adverse effects of norepinephrine?
2- Mention 4 contraindication of norepinephrine?
3- Mention mechanism of action of noradrenaline in treatment of hypotention?
4- Mention mechanism of dopamine in treatment of shock?
5- Mention mechanism of dobutamine in treatment of cardiogenic shock?
6- Mention three difference () dopamine and dobutamine?
7- Mention mechanism of salbutamol in treatment of bronchial asthma?
8- Mention mechanism of ritodrine in delaying of premature labor?
9- Mention mechanism of phenylephrine and xylometazidine as nasal decongestant?
10- Mention three side effects of beta 2 agonist?
11- Give three difference () clonidine and tizanidine?

MCQ on L8,9

1. Cardiovascular effects of a new drug (that activates autonomic receptors are shown in the table below:

Parameter	Control	Drug X
Systolic BP	120 mm Hg	110 mm Hg
Diastolic BP	85 mm Hg	55 mm Hg
Heart rate	60/min	120/min

C

The most probable receptor affinities of drug X are

a) α1 , α 2

b) α 1 , α 2 , β 1

c) β 1 , β 2

d) α1

e) β 1

Which of the following is correct regarding responses mediated by adrenergic receptors? a. Stimulation of αl receptors increases blood pressure. b. Stimulation of αl receptors reduces blood pressure. c. Stimulation of sympathetic presynaptic α2 receptors increases norepinephrine release. d. Stimulation of β2 receptors increases heart rate (tachycardia). e. e. Stimulation of β2 receptors causes bronchoconstriction.	**A**
3. All of the following are true about salbutamol except? A. It is selective β2 agonists. B. It can lose its selectivity in high doses. C. Tolerance is a common side effect of its use. D. It is used in the treatment of abortion. E. It is used in the treatment of bronchial asthma.	**D**
4. Which of the following drugs is considered indirect sympathomimetic? a. Epinephrine b. Clonidine c. Ephedrine d. Dopamine e. Amphetamine	**E**
5. Which of the following is the route of administration of norepinephrine in acute hypotensive states? A. Intramuscular B. Intravenous infusion. C. Subcutaneous. D. Transdermal patches E. Inhalation	**B**

6. A beta-2 adrenergic receptor-selective agonist(s), may be used in management of both chronic and acute asthma: A) Ritodrine. B) Timolol C) Propranolol. D) Salbutamol. E) Ephedrine.	D
7. Which of the following adrenergic drugs can be used in cardiogenic shock? A. Clonidine B. Tizanidine C. Dobutamine D. Salbutamol. E. Phenylephrine	C
8. Which of the following drugs can be injected by slow intravenous infusion to raise blood pressure? A. Clonidine B. Isoprenaline C. Noradrenaline D. Phenoxybenzamine E. Salbutamol	C
9. Which of the following is a therapeutic use for dopamine? A. Chronic bronchial asthma management B. Management of sleep cycles C. Management of tachyarrhythmias D. Treatment of shock E. Treatment of Raynaud's phenomenon	D

0. Stimulation of beta 1 adrenergic receptors produce which of the following? a) Dilatation of pupil. b) Relaxation of airway smooth muscles. c) GIT sphincter contractions. d) contraction of splenic capsule. e) secretion of renin from kidney.	**E**
11. Which of the following(s) adrenergic receptors regulate noradrenaline secretion from adrenergic nerve fibers? a) Alpha 1. b) Alpha 2. c) Beta 1. d) Beta 2. e) Beta 3.	**B**
12. The principal process which terminates the action of noradrenaline released from adrenergic nerve ending is: a) Degradation by MAO b) Methylation by COMT c) Axonal uptake d) Extra neuronal uptake e) Degradation by CYP450	**C**
13. The following action of adrenaline is not mediated by B receptors: a) Dilatation of blood vessels b) Dilatation of pupil c) Bronchodilation d) Renin release from kidney e) Tachycardia	**B**

14. Which of following drugs is preferred to be used to delay premature labor?

a) Dopomine /V

b) Norepinephrine IV

c) Ritodrine IV

d) fioprenaline IV

e) Dobutamine IV

C

15. An intravenous injection of drug X was given before & after the administration of atropine, and the heart rate was recorded. The results were depicted below: Which of the following drugs is most likely drug X?

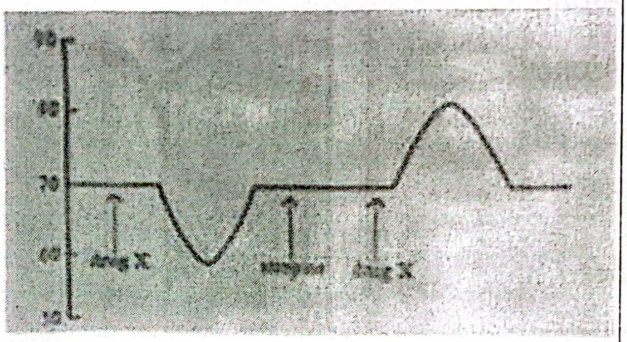
a) Epinephrine

b) Norepinephrine

c) Prazocin

d) Albuterol

e) Isoproterenol



B

16. Which of the following drugs will decrease heart rate in a patient with a normal heart but will have little or no effect heart rate is a cardiac transplant recipient?

a) Epinephrine

b) oproterenol

c) Norepinephrine

d) Salmeteral

e) Terbutaline

C

17. One of the following receptor subtypes relaxes smooth muscle and causes liver glycogenalysis and gluconeogenesis:

a. αl b. α2

c. β1 d. β2

e. β3

D

8. A 32 year old man presents to his primary care physician because of a 4-year-history of nasal stuffiness, cough and sinus pain. He is prescribed with phenylephrine, He must be aware of which of the following potential adverse effect: a) Constipation b) Diarrhea c) Rhinorrhea d) Hypertension e) Tinnitus	**D**
19. One of the following is the most likely to occur with parenteral administration of an α1-agonist drug: a) Hypotension b) Hypertension c) Tissue necrosis d) Vasodilation e) lipolysis.	**B**
20. Epinephrine has all the action listed EXCEPT: a) Raises systolic blood pressure b) Bronchodilatation c) Contracts internal sphincter of bladder d) Stimulation of central nervous system e) increases salivation	**E**
21. Catecholamine have all of the properties below except: a) Highly polar b) Orally absorbed c) Short duration of action, d) Rapid metabolism e) Rapid onset of action	**B**

22. A 7-year-old boy has a significant bed-wetting problem. A long acting indirect sympathomimetic agent sometimes used by the oral route for this indication is: a) Dobutamine b) Ephedrine c) Epinephrine d) Ieoproterenol e) Phenylephrine	B
23. Which of the following drugs is the drug of choice in anaphylaxis associated with bronchospasm and hypotension? a) Epinephrine b) Isoproterenol c) Norepinephrine d) Phenylephrine e) Salmeterol	A
24. The actions of norepinephrine at adrenergic receptors are terminated by which of the following: A. Metabolism by MAO in the liver B. Reuptake into the nerve terminal C. Conversion into 5-HIAA D. Conversion to dopamine E. None of the above	B
25. For the treatment of acute anaphylactic shock, adrenaline must be given by the following route: A. Inhalation B. Subcutaneous C. Intravenous D. Intramuscular E. Intracardiac	D

6. Dobutamine is best indicated for management of which the following shock: A. Septic shock B. Cardiogenic shock C. Anaphylactic shock D. Hypovolemic shock E. Neurogenic shock	**B**
27. Ritodrine hydrochloride can be used in the management of: A. Parkinson's disease B. Bronchial asthma C. Depression D. Premature labor E. Bradycardia	**D**
28. Selective α2 agonists that is used to relieve muscle spasm associated with a variety of neurological conditions is: A. Clonidine B. Tizanidine C. Ritodrine D. Midodrine E. Alpha methyldopa	**B**
29. Oxymetazoline has which of the following actions: A. Bronchodilation B. Vasoconstriction C. Hyperglycemia D. Tachycardia E. Inhibition of ejaculation	**B**

30. Which of the following drugs will decrease heart rate in a patient with a normal heart but will have no effect on heart rate in a cardiac transplant recipient? A. Epinephrine B. Salbutamol C. Norepinephrine D. Phenylephrine E. Dopamine	D

Other MCQ

1. A 7-year -old boy with a previous history of bee sting allergy is brought to the emergency department after being stung by 3 bees. If this child has signs of anaphylaxis, what is the treatment of choice? a. Diphenhydramine (an antihistamine) b. Ephedrine c. Epinephrine d. Isoproterenol e. Methylprednisolone (a corticosteroid)	C
2. You would note that β2 stimulants frequently cause? a. Direct stimulation of renin release b. Hypoglycaemia c. Itching d. Skeletal muscle tremor e. Vasodilation in the skin	D

. Mr Green, a 54-year -old banker, had a cardiac transplant 6 months ago. His current blood pressure is 120/70 mm Hg and heart rate is 100 bpm. Which of the following drugs would have the least effect on Mr Green's heart rate? a. Salbutamol b. Epinephrine c. Isoproterenol d. Norepinephrine e. Phenylephrine	E
4. Which of the following drugs is considered selective beta 1 agonist? a. Dobutamine b. Epinephrine c. Isoproterenol d. Norepinephrine e. Phenylephrine	A
5. Which of the following drugs can be used in shock states ? a. Epinephrine b. Isoproterenol c. Ephedrine d. Dopamine e. Phenylephrine	D
6. Which of the following drugs has selective alpha 2 agonistic activity? a. Epinephrine b. Clonidine c. Ephedrine d. Dopamine e. Phenylephrine	B

7. Which of the following drugs is considered indirect sympathomimetic? a. Epinephrine b. Clonidine c. Ephedrine d. Dopamine e. Amphetamine	E
8. Which of the following sympathomimetic acts both direct & indirect? a. Epinephrine b. Clonidine c. Ephedrine d. Dopamine e. Amphetamine	C
9. Which of the following drugs is a good choice when pupillary dilation—but not cycloplegia—is desired? a. Isoproterenol b. Norepinephrine c. Phenylephrine d. Pilocarpine e. Tropicamide	C
10. Albuterol will cause bronchodilation in the asthmatic because it is a: a. α agonist b. β1 agonist c. β2 agonist d. α antagonist e. β2 antagonist	C

11. The presence of epinephrine in a solution of local anesthetic enhances the duration of local anesthesia because it: a. Aids the penetration of the local anesthetic into the nerve axon b. Blocks the enzymic biotransformation of the local anesthetic c. Causes local vasoconstriction at the site of injection d. Has intrinsic local anesthetic action of its own e. Blocks pain fibers	**C**
12. Phenylephrine has which of the following actions: a. Bronchodilation b. Vasoconstriction c. Increases blood sugar d. Cardiac acceleration e. Inhibition of ejaculation	**B**
13. Epinephrine has all of the actions listed below EXCEPT: a. Raises blood glucose b. Raises blood free fatty acids c. Raises systolic blood pressure d. Causes bronchodilation e. Causes bradycardia	**E**
14. Which of the following drugs will potentiate the effects of norepinephrine: a. Reserpine b. Cocaine c. Scopolamine d. Propranolol e. Mecamylamine	**B**

15. β1 agonists will cause which one of the following actions: a. Cardiac slowing b. Vasoconstriction c. Breakdown of fats d. Breakdown of glycogen e. Release of norepinephrine	C
16. In the presence of cocaine which of the following drugs would be potentiated? a. Acetylcholine b. Tyramine. c. norepinephrine. d. Phentolamine. e. Mecamylamine.	C
17. non catecholamine adrenergic amines differ from catecholamines in that : a. Have a short duration of action b. Are not effective if administered orally c. Do not act indirectly, but usually combine directly with adrenergic receptors of the α1 and β2 subtypes d. Tend to have greater central nervous system (CNS) effects following oral administration e. Are metabolized at a more rapid rate.	D
18. Selecting an agent to elicit an increase in peripheral resistance without direct cardiac effects, the agent of choice would be: a. Norepinephrine. b. Dopamine. c. phenylephrine. d. Phentolamine. E. propranolol.	C

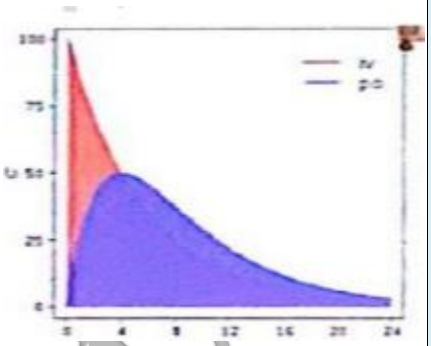
PHARMACOKINETICS

Q1	**A pro-drug is:** a) The prototype member of a class of drugs b) The oldest member of a class of drugs c) An inactive drug that is transformed in the body to an active metabolite d) A drug that is stored in the body tissues and then gradually released in the circulation	C
Q2	**The bioavailability of a drug:** a) Is a defined as the actual blood concentration required to produce a pharmacological effect b) Will be unaffected by changes in formulation c) May be affected by liver damage d) Must be 100% for a drug given by mouth and is completely absorbed Is a term applied only to oral administration	C
Q3	**Drugs that are highly bound to albumin:** a) Effectively cross BBB b) Are easily filtered at the glomerulus c) Have a large Vd d) Often contain quaternary nitrogen e) Can undergo competition with other drugs for albumin binding sites	E
Q4	**One of the following could decrease drug absorption:** a) Increased surface area dedicated to absorption b) b) Increased blood flow to the site of administration c) c) Increased bioavailability d) d) Increased lipid solubility e) e) Increased Ph when the drug is a weak acid	E

Q5	**One of the following bioavailability is assumed to be for IV dosage?** **a) 0%** b) 25% c) 50% d) d) 75% e) e) 100%	E
Q6	**To be excreted from the system …… drugs need to be made water soluble …… is oxidation / reduction/hydrolysis , …… is conjugation with glucuronide I sulphate** a) Lipophilic , phase I, phase II b) Hydrophilic , phase , phase II c) Lipophobic , phase II , phase I d) Lipolytic, phase I, phase II e) Lipophilic ,phase II ,phase I	A
Q7	**Weak acids are excreted faster in ……. urine and weak bases are excreted faster in ……. urine :** a) Acidic : alkaline b) Alkaline : acidic c) Acidic : neutral d) Neutral : alkaline e) Alkaline : neutra	B
Q8	**If a drug is known to be distributed into total body water, what dose (mg) is need to obtain an initial plasma level of 5 mg/l in a patient weighing 70 kg?** a) 210 b) 150 c) 110 d) 50 e) 35	A

Q9	**Which of the following would be the likely result of a decrease in urinary Ph?** a) Decreased urinary excretion of a weak base b) increased urinary excretion of weak acid c) c) increased urinary excretion of a weak base d) d) decreased urinary excretion of a non-ionized drug e) increase urinary e) excretion of a completely ionized drug	C
Q10	**The rate of urinary excretion of acidic drug such as aspirin and barbiturates is increased by:** a) Administration of sodium bicarbonate b) Administration of ammonium chloride c) Administration of ascorbic acid d) Keeping the urine at natural PH	A
Q11	**Which of the following drugs , tend to be ionized in breast milk and thus ,** **become trapped inside it?** a) Amphetamine (pka = 9.9) b) Phenobarbitone (pka = 7.9) c) Warfarin (pka = 5) d) Aspirin (pka = 3.5) e) Ampicillin (pka = 2.5)	A
Q12	**Which of the following is the amount of a drug absorbed to systemic circulation per the amount administered?** a) Bioavailability b) Bioequivalence c) Drug absorption d) Dosage e) Distribution	A
Q13	**Predominant form of Aspirin in the stomach is :** a) ionized b) non ionized	B

Q14	**Gentamycin an animal glycoside antibiotic , is sometimes given to intermittent intravenous bolus doses of 100 mg 3 times a day to achieve target peak plasma concentration of about 5mg/l gentamycin's clearance (normally 5.41/h/70kg) is almost entirely by glomerular filtration . your patient , however, is found to have creatinine clearance 30% normal. what should your modified dosage regimes for this patient be?** a) 20mg 3 times a day b) 33mg 3 times a day c) 72mg 3 times a day d) 100 mg 2 times a day e) 150 mg 3 times a day	B
Q15	**Which of the following parameters is used to define the relation between the desired therapeutic effect and the toxic effect?** a) Potency b) Intrinsic activity c) Therapeutic index d) Efficacy e) Bioavailability	C
Q16	**A drug that binds to a receptor and produces a biological response that mimics the response to the endogenous ligand is known as:** a) Agonist b) Antagonist c) Functional antagonist d) partial agonist e) Partial antagonist	A
Q17	**In presence of pentazocine, a higher concentration of morphine is required to elicit full pain relief. Pentazocine by itself has a smaller analgesic effect than does morphine, even at the highest dose. Which Of the following is Correct regarding these medications?** a) Morphine is a full agonist, and pentazocine partial agonist. b) Pentazocine a competitive antagonist. c) Morphine is less effective than is pentazocine. d) Morphine is less potent than is pentazocine.	A

Q18	**Identical doses of a drug are given orally and intravenously. We plot the data shown here: Further analysis of only these data will allow you to determine which of the following?** a) Elimination route(s) b) Extent of plasma protein binding c) Oral bioavailability d) Potency e) Therapeutic effectiveness 	C
Q19	**For which of the following drugs is excretion most significantly accelerated by acidification of the urine ?** a) Weak acid with pka of 5.5 b) Weak acid with pka of 3.5 c) Weak base with pka of 7.5 d) Weak base with pka of 7.1 e) weak base with pka of 8.1	E
Q20	**About biotransformation untrue is :** a) Active metabolites are formed b) Generally more fat soluble metabolites are formed c) Generally more H2O soluble metabolites are formed d) Toxic metabolites can be formed.	B
Q21	**Drugs that are administered IV are:** a) Rapidly absorbed b) b) Subject to first-pass metabolism c) c) 100% bioavailable d) d) Rapidly excreted by the kidneys e) e) Rapidly metabolized by the liver	C
Q22	**Stimulation of microsomal enzymes can:** a) Require the dose increase of some drugs b) b) Require the dose decrease of some drugs c) c) Prolong the duration of the action of a drug d) Intensify the unwanted reaction of a drug e) e) Potentiate the efficacy of drugs	A

Q23	**A decrease in renal and liver function, as seen in the elderly, would prolong drug half-life, …….plasma protein binding, and ……volume of distribution.** a) Increase; Increase b) Decrease; Decrease c) Increase; Decrease d) Decrease; Increase	D
Q24	**The bioavailability of a drug:** a) Is defined as the actual blood concentration required to produce a pharmacological effect b) Will be unaffected by changes in formulation c) May be affected by liver damage d) Must be 100% for a drug given by mouth and is completely absorbed e) Is a term applied only to oral Administration	C
Q25	**Normally, gentamicin has a Vd = 20L and Cl = 80 mL/min. If gentamicin was administered to a patient with 50% renal function, what parameter would differ from normal?** a) Loading dose would be higher b) Maintenance dose would be lower c) t $\frac{1}{2}$ would be shorter d) Vd would be 35L e) Cl would be 700 mL/min	B
Q26	**X is a drug that is extensively bound to plasma proteins. If you give therapeutic dose to a person with sever hypoalbuminemia which one of the following effects would you expect to occur:** a) A great than normal (possibly toxic) response to the drug b) A longer duration of action c) A slower onset of action d) No effect of drug X at all e) A drug effect completely different from what normally occur	A

Q27	**About biotransformation. Untrue is:** a) inactive metabolites are formed b) b) active metabolites are formed c) c) generally more fat-soluble metabolites are formed d) d) generally more water-soluble metabolites are formed e) e) toxic metabolites are formed	C
Q28	**The loading dose of a drug is governed by its:** a) Renal clearance b) Plasma half-life c) Volume of distribution d) Elimination rate constant	C
Q29	**Loading dose of a drug is given:** a) To achieve steady state concentration in short time b) For drugs with short half life c) For drugs with long half life d) To reduce complications e) When the drug eliminated by first order kinetic	A
Q30	**For calculating the volume of distribution (Vd) one must consider:** a) concentration of a substance in plasma b) concentration of a substance in urine c) therapeutic width of drug action d) a daily dose of drug e) intrinsic activity of the drug	A
Q31	**What organ is responsible for metabolism in 1st pass metabolism?** a) Brain b) Kidney c) Spleen d) heart e) Liver	E

Q32	**Bioavailability is the fraction or percentage of administered drug that reaches the systemic circulation via a given route as compared to what route?** a) Oral b) IV c) SC d) CSE e) IM	B
Q33	**Bioavailability is:** a) Plasma protein binding of a substance b) Permeability through the BBB c) Fraction of a drug reaching the systemic circulation following any route administration d) Amount of a substance in urine relative to initial dose e) Presystemic degradation of a drug	C
Q34	**Which of the following reactions is phase Il elimination of drug?** a) Glucuronidation b) Oxidation c) Hydrolysis d) Ionization e) Reduction	A
Q35	**Conjugation:** a) Process of drug reduction by special enzymes b) Process of drug oxidation by special oxidases c) Coupling of a drug with an endogenous substrate d) Solubilization in lipids d) Unionization of drugs	C
Q36	**Metabolic transformations (phase 1) is:** a) acetylation & methylation of substances b) transformation of substances due to oxidation, reduction, hydrolysis c) glucuronide formation d) binding to plasma proteins	B

Q37	**MS. Smith, a 65-year-old woman with pneumonia, was given Tobramycin antibiotic, 150mg, iv. After 20 minutes, the plasma concentration was measured & was found to be 3mg/L. Assuming no elimination of the drug in 20 minutes, what is the apparent volume of distribution of Tobramycin in MS. Smith?** a) 3L/min b) 3L c) 50L d) 7L e) 0.1mg/min	C
Q38	**Which of the following will be the likely result of a decrease in urinary PH?** a) decreased urinary excretion of a weak base b) increased urinary excretion of a weak acid c) increased urinary excretion of a weak base	C
Q39	**Which of the following drugs will be absorbed to the least extent in the stomach?** a) Ampicillin (pka=25) b) Aspirin (pKa=3.5) c) Warfarin (pKa=5) d) Phenobarbital (pKa=7.9) e) Amphetamine (pka=9.9)	E
Q40	**pharmacokinetics include:** a) Localization of the drug b) mechanism of drug action c) excretion of substances d) interaction of substances e) the effect of drug on body control system	C
Q41	**A hydrophilic (water-soluble) medicinal agent has the following property:** a) low ability to penetrate through the cell membrane lipids b) penetrates through membranes by means of endocytosis c) easy permeation through the BBB	A

	d) high reabsorption in renal tubules	
Q42	**Which of the following types of drug metabolizing enzymes are inducible:** a) Microsomal enzymes b) Non-microsomal enzymes. c) Bothe microsomal and non-microsomal enzymes d) Mitochondrial enzymes	A
Q43	**For which of the following drugs is excretion most significantly accelerated by acidification of the urine ?** a) Weak acid with pka of 5.5 b) Weak acid with pka of 3.5 c) Weak base with pka of 7.5 d) Weak base with pka of 7.1	C

Sympatholytics

Q1	**The β adrenergic blocker having β1 selectivity is:** a. Carvedilol b. Atenolol c. Propranolol d. Timolol	B
Q2	**The following disease is worsened by propranolol:** a. Glaucoma b. Benign prostatic hypertrophy c. Bronchial asthma d. Parkinsonism	C
Q3	**A patient is to receive epinephrine. She has previously received an adrenoceptor - blocking agent. Which of the following effects of epinephrine would be blocked by phentolamine but not by metoprolol?** a. Cardiac stimulation b. Increase of cAMP in fat c. Mydriasis d. Relaxation of bronchial smooth muscle e. Relaxation of the uterus	C
Q4	**Which of the following is considered non selective alpha blocker?** a. Prazosin b. Yohimbine c. Phentolamine d. Tamsulosin e. Atenolol	C

Q5	**Clinical studies have shown that adrenoceptor blockers have many useful effects in patients. However, a number of drug toxicities have been documented. Adverse effects that limit the use of adrenoceptor blockers include which one of the following?** a. Bronchoconstriction from a-blocking agents b. Acute heart failure exacerbation from β blockers c. Impaired blood sugar response with a blockers d. Increased intraocular pressure with β blockers e. Sleep disturbances from a-blocking drugs	B
Q6	**When given to a patient, phentolamine blocks which one of the following?** a. Bradycardia induced by phenylephrine b. Bronchodilation induced by epinephrine c. Increased cardiac contractile force induced by norepinephrine d. Miosis induced by acetylcholine e. Vasodilation induced by isoproterenol	A
Q7	**Which of the following drugs block alpha 2 selectively?** a. Prazosin b. Propranolol c. Phentolamine d. Yohimbine e. Phenoxybenzamine	D
Q8	**Which of the following side effects NOT occur with propranolol?** a. Tachycardia b. Hypotension c. Bronchospasm d. Allergy e. Fatigue	A

Q9	**Which of the following side effects occur with prazosin?** a. Tachycardia b. Hypotension c. Urine retention d. Miosis e. Dry mouth	B
Q10	**Carvedilol is an effective antihypertensive agent that, like propranolol, is capable of blocking beta receptors. An important difference between the two drugs is that carvedilol?** a. Is a selective blocker of cardiac β1 receptors b. Has vasodilator effect c. Is available only as eye drops d. Has local anaesthetic effect e. Stimulates β2 receptors in bronchioles	B
Q11	**A 56-year -old man has hypertension and an enlarged prostate, which biopsy shows to be benign prostatic hyperplasia. He complains of urinary retention. Which of the following drugs would be the most appropriate initial therapy?** a. Albuterol b. Atenolol c. Metoprolol d. Prazosin e. Timolol	D

MCQ Lecure 1

1. The drug administration route demonstrating the slowest onset of action : a. *Inhalation.* b. *Rectal* c. *Intramuscular.* d. *Sublingual.* e. *Intravenous.*	**B**
2. In order for drugs to cross the blood-brain barrier, they must be : a. *Ionized.* b. *+ve charged.* c. *Water soluble.* d. *Lipid soluble.* e. *-ve charge.*	**D**
3. Rate of drug absorption would be increased by which of the following ? a. *Drug ionization.* b. *Water solubility.* c. *Positively charged drug.* d. *Negatively charged drug.* e. *Lipid solubility.*	**E**
4. Pharmacokinetics include: a. *Localization of the drug* b. *mechanism of drug action* c. *excretion of substances* d. *interaction of substances* e. *the effect of drug on body control system*	**C**

5. Predominant form of Aspirin in the stomach is: a. *Ionized.* b. *Non ionized.*	**B**
6. Which of following drugs will be absorbed to the least extent in stomach? a. *Ampicillin (pka=2.5)* b. *Aspirin (pKa=3.5)* c. *Warfarin (pKa=5)* d. *Phenobarbital (pka-7.9)* e. *Amphetamne (pKa-9.9)*	**E**
7. Which of following will be the result of a decrease in urinary pH? a. *decreased urinary excretion of a weak base* b. *increased urinary excretion of a weak acid* c. *increased urinary excretion of a weak base*	**C**
8. A hydrophilic (water-soluble) medicinal agent has the following property: a. *low ability to penetrate through the cell membrane lipids* b. *penetrates through membranes by means of endocytosis* c. *easy permeation through the BBB* d. *high reabsorption in renal tubules*	**A**
9. Bioavailability is: a. *plasma protein binding of a substance* b. *permeability through the BBB* c. *fraction of a drug reaching the systemic circulation following any route administration* d. *amount of a substance in urine relative to initial dose* e. *presystemic degradation of a drug*	**C**

10. Bioavailability is the fraction or percentage of administered drug that reaches the systemic circulation via a given route as compared to what route? *a. oral* *b. IV* *c. SC* *d. CSF* *e. IM*	***B***
11. For calculating the volume of distribution (Vd) one must consider: *a. concentration of a substance in plasma* *b. concentration of a substance in urine* *c. therapeutic width of drug action* *d. a daily dose of drug* *e. intrinsic activity of the drug*	***A***
12. MS. Smith, a 65-year-old woman with pneumonia, was given Tobramycin antibiotic, 150mg, iv. After 20 minutes, the plasma concentration was measured & was found to be 3mg/L. Assuming no elimination of the drug in 20 minutes, what is the apparent volume of distribution of Tobramycin in MS. Smith? *a. 3L/min* *b. 3L* *c. 50L* *d. 7L* *e. 0.1mg/min*	***C***

13. X is a drug that is extensively bound to plasma proteins. If you give therapeutic dose to a person with sever hypoalbuminemia which one of the following effects would you expect to occur: *a. A great than normal (possibly toxic) response to the drug* *b. A longer duration of action* *c. A slower onset of action* *d. No effect of drug X at all* *e. A drug effect completely different from what normally occur*	***A***
14. For which of the following drugs is excretion most significantly accelerated by acidification of urine: *a. weak acid with pka of 5.5* *b. weak acid with pka of 3.5* *c. weak base with pKa of 7.5* *d. weak base with pKa of 7.1* *e. weak base with pKa of 8.1*	***E***
15. Weak acids are excreted faster in ---- urine and weak bases are excreted faster in ---- urine : *a. Acidic : alkaline* *b. Alkaline : acidic* *c. Acidic : neutral* *d. Neutral : alkaline* *e. Alkaline : neutral*	***B***

16. One of the following bioavailability is assumed to be for IV dosage? a. *0%* b. *25%* c. *50%* d. *75%* e. *100%*	***E***
17. One of the following could decrease drug absorption: a. *Increased surface area dedicated to absorption* b. *Increased blood flow to the site of administration* c. *Increased bioavailability* d. *Increased lipid solubility* e. *Increased Ph when the drug is a weak acid*	***E***
18. Drugs that are highly bound to albumin: a. *Effectively cross BBB* b. *Are easily filtered at the glomerulus* c. *Have a large Vd* d. *Often contain quaternary nitrogen* e. *Can undergo competition with other drugs for albumin binging sites*	***E***
19. The bioavailability of a drug: a. *Is a defined as the actual blood concentration required to produce a pharmacological effect* b. *Will be unaffected by changes in formulation* c. *May be affected by liver damage* d. *Must be 100% for a drug given by mouth and is completely absorbed* e. *Is a term applied only to oral administration*	***C***

20. Which of the following is the amount of a drug absorbed to systemic circulation per the amount administered? *a. Bioavailability* *b. Bioequivalence* *c. Drug absorption* *d. Dosage* *e. Distribution*	***A***
21. Which of the following drugs, tend to be ionized in breast milk and thus, become trapped inside it? *a. Amphetamine (pka =9.9)* *b. Phenobarbitone (pka= 7.9)* *c. Warfarin (pka =5)* *d. Aspirin (pka=3.5)* *e. Ampicillin (pka=2.5)*	***A***
22. The rate of urinary excretion of acidic drug such as aspirin and barbiturates is increased by: *a) Administration of sodium bicarbonate* *b) Administration of ammonium chloride* *c) Administration of ascorbic acid* *d) Keeping the urine at natural PH*	***A***
23. Which of the following would be the likely result of a decrease in urinary Ph? *a) Decreased urinary excretion of a weak base* *b) increased urinary excretion of weak acid* *c) increased urinary excretion of a weak base* *d) decreased urinary excretion of a non-ionized drug* *e) increase urinary excretion of a completely ionized drug*	***C***

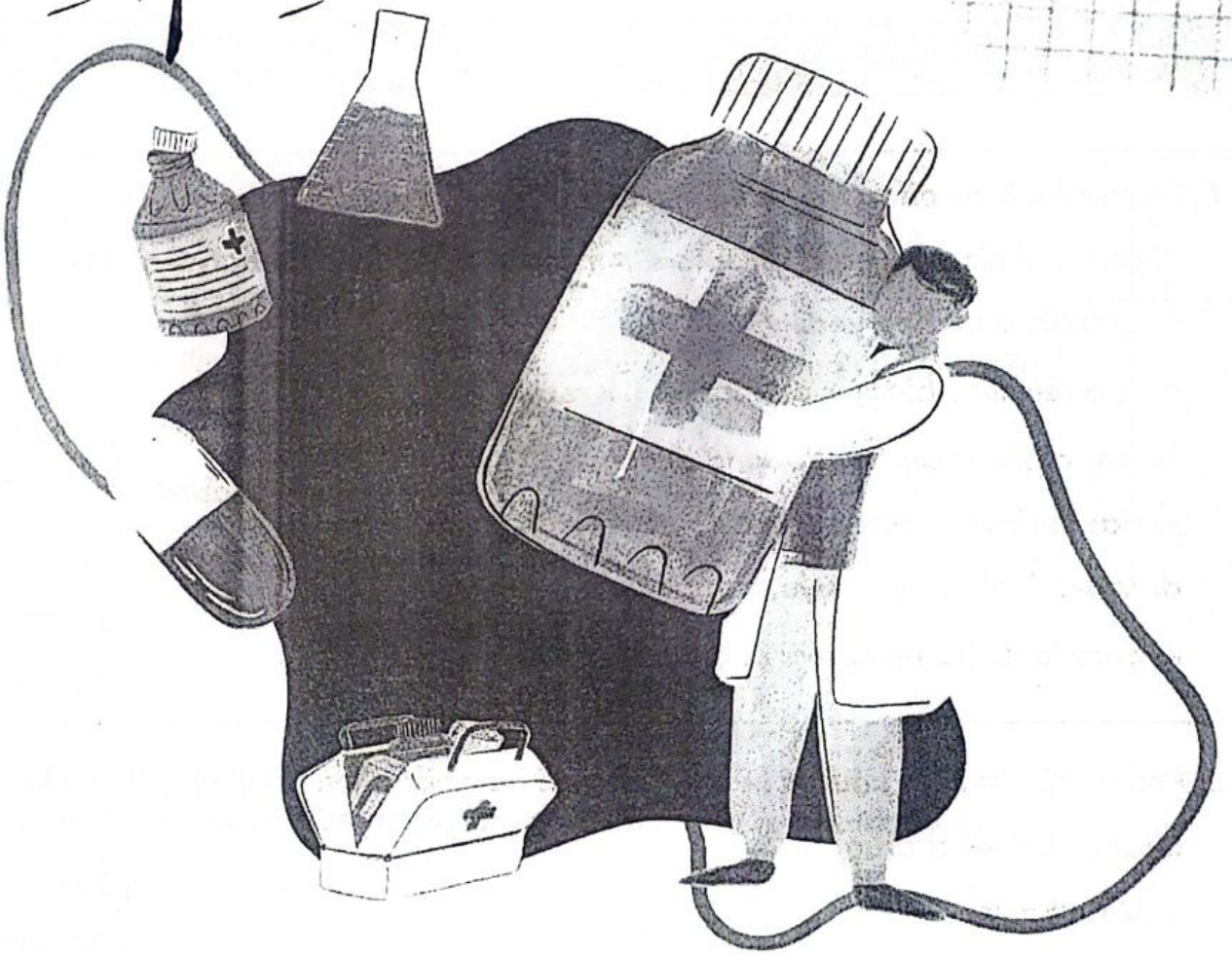
24. For which of the following drugs is excretion most significantly accelerated by acidification of the urine ? *a) Weak acid with pKa of 5.5* *b) Weak acid with pKa of 3.5* *c) Weak base with pKa of 7.5* *d) Weak base with pKa of 7.1*	**C**
25. Drugs that are administered IV are *a) Rapidly absorbed* *b) Subject to first-pass metabolism* *c) 100% bioavailable* *d) Rapidly excreted by the kidneys* *e) Rapidly metabolized by the liver*	**C**
26. Normally, gentamicin has a Vd = 20L and Cl = 80 mL/min. If MK gentamicin was administered to a patient with 50% renal function, what parameter would differ from normal? *a) Loading dose would be higher* *b) Maintenance dose would be lower* *c) t ½ would be shorter* *d) Vd would be 35L* *e) Cl would be 700 mL/min*	***B***

LEVEL 1 - SEMESTER 2

PHARMACOLOGY

فلسم الطين

2024



MCQ 10 & 11

Adrenergic blocker

DR. M.M.

Written Lecture 10 ,11

1- Mention mechanism of phenoxybenzamine in treatment of pheochromocytoma?

2- Mention why tamsulosin is preferred in treatment of benign prostatic hyperplasia?

3- Mention three side effects of alpha blocker (prazosin)?

4- Mention MOA and side effect of alpha methyle dopa?

5- Mention 4 side effects of beta blocker?

6- Mention 4 contraindication of beta blocker (absolute, relative)?

MCQ Lecture 10 ,11

1. Carvedilol is an effective antihypertensive agent that, like propranolol, is capable of blocking beta receptors. An important difference between the two drugs is that carvedilol? a. Is a selective blocker of cardiac β1 receptors b. Has alpha receptor blocking actions c. Has intrinsic sympathomimetic activity d. Is available only as eye drops e. Stimulates β2 receptors in bronchioles	**B**
2. Reflex tachycardia caused by the systemic administration of albuterol can be blocked by what drug? a. Dobutamine b. Prazosin c. Phenylephrine d. Atenolol e. Low-dose epinephrine	**D**

3. Which one of the followings is a sympatholytic drug? A. Dobutamine B. Dopamine C. Prazosin D. Isoprenaline	**C**
4. Which of the following is a side effects of prazosin? A. Urine retention B. First-dose hypotension C. Depression D. Reflex tachycardia. E. Miosis	**B**
5. Which of the following drugs may cause autoimmune hemolytic anemia? A. Phenoxybenzamine B. Alpha methyldopa C. Yohimbine D. Tamsulosin E. Propranolol	**B**
6. Which of the following adrenergic drugs can be used in treatment of hypertension? A. Clonidine B. Dopamine C. Isoprenaline D. Phenylephrine E. Terbutaline	**A**

7. Which of the following drugs is a beta blocker with additional vasodilator action? A. Carvedilol B. Atenolol C. Metoprolol D. Propranolol E. Pindolol	A
8. In treatment of pheochromocytoma, which adrenergic receptor blocker can be used? A. Prazosin B. Phenoxybenzamine C. Yohimbine. D. Tamsulosin E. Atenolol	B
9. Which of the following drugs blocks alpha 2 receptors? A. Phenoxybenzamine B. Prazosin C. Yohimbine D. Tamsulosin E. Phentolamine	C
10. Reflex tachycardia caused by the systemic administration of albuterol can be blocked by what drug? a) Dobutamine b) Prazosin c) Phenylephrine d) Metoprolol e) Low-dose epinephrine	D

11. In a patient having hypertension, propranolol was given. Though the drug-controlled hypertension but it reduced resting heart rate to 50 bpm. Which of the following blockers can be used in this patient as an effective substitute which does not cause bradycardia? a) Pindolol b) labetalol c) atenolol d) Bisoprolol	**A**
12. An example of covalent drug receptor interaction is: a) Noradrenaline binding to β adrenergic receptor b) Acetylcholine binding to muscarinic receptor c) Prazosin binding to α adrenergic receptor d) Phenoxybenzamine binding to alpha adrenoreceptor	**D**
13. Select the ultra-short acting cardio selective B adrenergic blocker a) Bisoprolol b) Esmolol c) Timolol d) Sotalol e) Propranolol	**B**
14. Which of the following is a selective α 1A receptor blocker that affords symptomatic relief in benign prostatic hypertrophy without producing significant fall in blood pressure? a) Terazosin b) Doxazosin c) Trimazosin d) Tamsulosin e) prazosin	**D**

15. Which group or patients is mostly at risk for adverse effect of β 2-blockers? a) *Asthmatics* b) *Patients with congestive heart failure* c) *Traumatic patients* d) *Diabetics* e) *Patients with deep vein thrombosis (DVTS)*	A
16. 60-year old man has a blood pressure of 160/100 mmHg and slightly enlarged prostate. Which of the following medications would be useful in treating both of these conditions? a) *Doxazocin* b) *Labetalal* c) *Phantolamine* d) *Propranolol* e) *Bethanechal*	A
17. The following is a selective alpha adrenoceptor antagonist: a) *Prazosin* b) *Pentolamine* c) *Yohimbine* d) *Clonidine* e) *Phenoxybenzomine*	C
18. Select the drug which affords faster and greater symptomatic relief in benign hypertrophy of prostate: a) *Tamsulosin* b) *Demopressin* c) *Finasteride* d) *Sildenafil* e) *Prazosin*	A

19. Which of the following actions of adrenaline would be blocked by phenoxybenzamine but not by propranolol? a) Cardiac stimulation b) Contraction of the radial smooth muscle of the iris c) Increase renin secretion. d) Relaxation of bronchial smooth muscle. e) Relaxation of the uterus	**B**
20. One of the following its storage acts by Increasing the release of norepinephrine from its storage sites: a) Amphetomine b) Dopomine c) Phenylephrine d) Reserpine e) Clonidine	**A**
21. One of the following is MOST contraindicated for methyldopa: a) Renal insufficiency b) Caronary insufficiency c) Mental depression d) Liver disease e) Asthma	**C**
22. Yohimbine is an antagonist of a) a1 receptors b) a2 receptors c) B2 receptors d) Bath a1 and a2 receptors e) B1 receptors	**B**
23. False +ve test for antinuclear factor may be caused by: A. Phenoxybenzamine B. Prazosin C. Reserpine D. Yohimbine	**B**

24. All the following conditions can be effectively treated by beta-blockers EXCEPT: A. Angina pectoris B. Essential hypertension C. Raynaud's disease D. Open angle glaucoma E. Supraventricular tachycardia	C
25. The therapeutic action of beta- blockers in angina pectoris is believed to be primarily due to: A. Reduced production of catecholamines B. Dilatation of the coronary vessels C. Decreased myocardial oxygen requirement D. Increased peripheral resistance E. Increased sensitivity to catecholamines	C
26. Myocardial depression caused by overdose of beta blockers can be reversed by parenteral administration of: A. Adrenaline B. Dopamine C. Isoprenaline D. Glucagon E. Insulin	D
27. Excessive bradycardia induced by beta-blockers is best treated by: A. Dopamine B. Epinephrine C. Isoprenaline D. Neostigmine E. Atropine	E

28. Essential tremors can be best decreased by which of the following beta blockers? *A. Atenolol* *B. Propranolol* *C. Betaxolol* *D. Nebivolol* *E. Bisoprolol*	***B***
29. The following beta-blocker is preferred to control tachycardia when peripheral vascular disease is also associated: *A. Propranolol* *B. Dilevalol* *C. Timolol* *D. Pindolol* *E. Sotalol*	***B***
30. One of the following drugs is best chosen for the control of hypertension during pregnancy: *A. Captopril* *B. Propranolol* *C. Reserpine* *D. Phenoxybenzamine* *E. Alpha methyldopa*	***E***

31. The effects of 4 drugs (#1-4) on mean BP administered individually before and after prazosin.

Condition	Drug #1	Drug #2	Drug #3	Drug #4
Before prazosin	↑↑	↑↑	↓↓	↑
After prazosin	↑	↑	↓↓	↓

The order of drug #1 through drug #4 is best represented by:

a) Epinephrine-tyramine-isoproterenol-norepinephrine

b) Tyramine isoproterenol-norepinephrine epinephrine

c) Norepinephrine isoproterenol-epinephrine-tyramine

d) Isoproterenol-epinephrine-tyramine norepinephrine

e) Norepinephrine-tyramine-isoproterenol-epinephrine

E

32. Nasal decongestants carry the risk of cerebral stroke in which of the following conditions:

A. Arterial hypertension

B. Allergic rhinitis

C. Epistaxis

D. Benign prostatic hypertrophy

E. Sinusitis

A

33. Positive Coomb's test and hemolytic anemia may follow the administration of:

A. Prazosin

B. Alpha methyldopa

C. Guanithidine

D. Reserpine

E. Clonidine

B

Other MCQ

1. A patient is to receive epinephrine. She has previously received an adrenoceptor -blocking agent. Which of the following effects of epinephrine would be blocked by phentolamine but not by metoprolol? a. Cardiac stimulation b. Increase of cAMP in fat c. Mydriasis d. Relaxation of bronchial smooth muscle e. Relaxation of the uterus	**C**
2. Clinical studies have shown that adrenoceptor blockers have many useful effects in patients. However, a number of drug toxicities have been documented. Adverse effects that limit the use of adrenoceptor blockers include which one of the following? a. Bronchoconstriction from α-blocking agents b. Acute heart failure exacerbation from β blockers c. Impaired blood sugar response with α blockers d. Increased intraocular pressure with β blockers e. Sleep disturbances from α-blocking drugs	**B**
3. When given to a patient, phentolamine blocks which one of the following? a. Bradycardia induced by phenylephrine b. Bronchodilation induced by epinephrine c. Increased cardiac contractile force induced by norepinephrine d. Miosis induced by acetylcholine e. Vasodilation induced by isoproterenol	**A**

4. A 56-year -old man has hypertension and an enlarged prostate, which biopsy shows to be benign prostatic hyperplasia. He complains of urinary retention. Which of the following drugs would be the most appropriate initial therapy? a. Albuterol b. Atenolol c. Metoprolol d. Prazosin e. Timolol	**D**
5. The following disease is worsened by propranolol: a. Glaucoma b. Benign prostatic hypertrophy c. Bronchial asthma d. Parkinsonism	**C**
6. Carvedilol is an effective antihypertensive agent that, like propranolol, is capable of blocking beta receptors. An important difference between the two drugs is that carvedilol? a. Is a selective blocker of cardiac β1 receptors b. Has vasodilator effect c. Is available only as eye drops d. Has local anaesthetic effect e. Stimulates β2 receptors in bronchioles	**B**
7. The β adrenergic blocker having β1 selectivity is: a. Carvedilol b. Atenolol c. Propranolol d. Timolol	**B**

8. Which of the following is considered non selective alpha blocker? a. Prazosin b. Yohimbine c. Phentolamine d. Tamsulosin e. Atenolol	**C**
9. Which of the following side effects occur with prazosin? a. Tachycardia b. Hypotension c. Urine retention d. Miosis e. Dry mouth	**B**
10. In the presence of phenoxybenzamine, an injection of epinephrine will cause which of the following: a. Bronchoconstriction b. Hypotension c. Inability to micturate d. Low blood sugar e. Rise in body temperature	**B**
11. To lower and maintain blood pressure in the hypertensive individual for long periods of time, which one of the following drugs would be effective: a. Isoproterenol b. Phentolamine c. Propranolol d. Dopamine e. Atropine	**C**

12. Which of the following drugs will block the vascular actions of isoproterenol: a. Atropine b. Phenoxybenzamine c. propranolol d. Yohimbine e. Prazosin.	C
13. β1 Adrenergic blockers are effective in treating all the conditions listed below EXCEPT: a. Angina pectoris b. Hypertension c. Glaucoma d. Migraine e. Benign prostatic hypertrophy	E
14. The mechanism of action of prazosin involves: a. Activation of β1-receptors b. Specific activation of α2-receptors c. Blockade of alpha receptors d. Elimination of β2-effects e. Non equilibrium α-adrenergic blockade	C
15. Blockade of this receptor would lead to increased levels of catecholamines in the neuroeffector junction. a. α1 b. α2 c. β1 d. β2 e. Dopamine	B
16. Glaucoma can be effectively treated by topical use of: a. Timolol b. Phentolamine c. Amphetamine d. Phenoxybenzamine e. Norepinephrine	A

Extra Pharmacology Case-Based MCQs (50 Questions)

Q1. A cancer patient is treated with a drug that causes peripheral neuropathy. Which of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q2. A patient on a parasympatholytic drug develops dry mouth and blurred vision. Which of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q3. A hypertensive emergency is managed by a drug that activates D1 receptors and causes vasodilation. Which is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q4. Which of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q5. A patient receives a drug that is metabolized by the liver and excreted by the kidney. Which

phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q6. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q7. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q8. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q9. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q10. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q11. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q12. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q13. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q14. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q15. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q16. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q17. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q18. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q19. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q20. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q21. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q22. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q23. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q24. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q25. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q26. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q27. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q28. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q29. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q30. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q31. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q32. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q33. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q34. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q35. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q36. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q37. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q38. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q39. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q40. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q41. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q42. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q43. A hypertensive emergency is managed by another drug that activates D1 receptors and causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q44. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q45. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

Q46. A cancer patient is treated with another drug that causes peripheral neuropathy. What of the following drugs is most likely responsible?

A. Vincristine

B. Methotrexate

C. Doxorubicin

D. Cyclophosphamide

Answer: A. Vincristine

Q47. A patient on a parasympatholytic drug develops dry mouth and blurred vision. What of the following drugs is most likely responsible?

A. Bethanechol

B. Atropine

C. Neostigmine

D. Pilocarpine

Answer: B. Atropine

Q48. A hypertensive emergency is managed by another drug that activates D1 receptors and

causes vasodilation. What is the drug?

A. Dobutamine

B. Fenoldopam

C. Clonidine

D. Norepinephrine

Answer: B. Fenoldopam

Q49. What of the following drugs irreversibly inhibits cyclooxygenase?

A. Ibuprofen

B. Naproxen

C. Aspirin

D. Celecoxib

Answer: C. Aspirin

Q50. A patient receives another drug that is metabolized by the liver and excreted by the kidney. What phase of metabolism involves conjugation?

A. Phase I

B. Phase II

C. Absorption

D. Elimination

Answer: B. Phase II

scan me

2024

Lecture 2 MCQ

PHARMACOLOGY

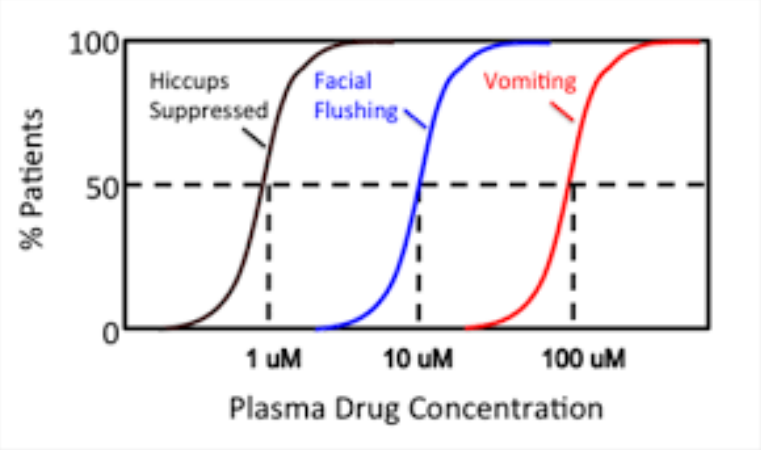
Level 1 Semester 2

DR. ELSAWY

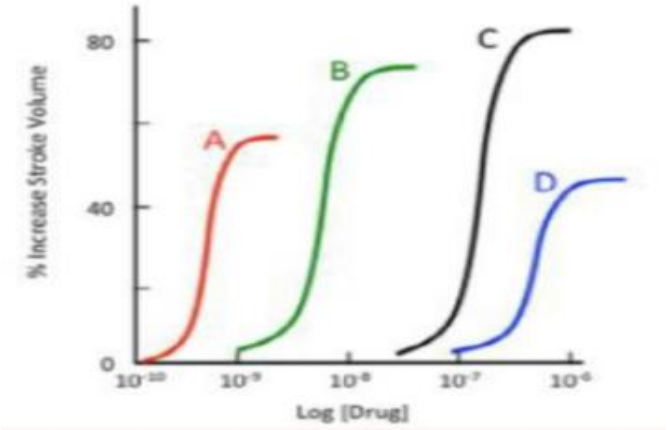
MCQ

1) The phrase "ability to bind to a receptor" fits the definition of a. Agonist b. Efficacy c. Potency d. Affinity	**D**
2) Which of the following provides information about the largest response a drug can produces, regardless of dose? a. Drug potency b. Maximal efficacy c. Mechanism of receptor action d. Therapeutic index	**B**
3) Which of the following factors will determine the number of drug receptor complexes formed: a. Efficacy of the drug. b. Receptor affinity for the drug. c. Therapeutic Index of the drug. d. Half-life of the drug.	**B**
4) Which of the following parameters is used to define the relation between the desired therapeutic effect and the toxic effect? a) Potency b) Intrinsic activity c) Therapeutic index d) Efficacy	**C**

5) Partial agonist has a) Partial affinity and efficacy b) Affinity And partial efficacy. c) Efficacy and partial affinity d) Neither affinity nor efficacy	**B**
6) If 10 mg of naproxen produces the same analgesic response as 100 mg of ibuprofen, which of the following statements is correct? a) Naproxen is more efficacious than is ibuprofen. b) Naproxen is more potent than ibuprofen. c) Naproxen is a competitive antagonist. d) Naproxen is a better drug to take for pain relief than is ibuprofen.	**B**
7) In the absence of any ß-receptor acting drugs, pindolol causes an Increase in heart rate by activating beta adrenoceptors. In the presence of highly effective beta stimulants, however, pindolol a dose-dependent, decrease in heart rate. Therefore, pindolol Is probably: a) An Irreversible antagonist. b) physiologic antagonism c) chemical antagonist. d) A partial agonist.	**D**
8) Lithium has a narrow therapeutic index. Which of the following describes a narrow therapeutic index? a) The chance of toxicity is remote at the therapeutic dose b) The ratio of TD50 to ED50 equal 1 c) The ratio of TD50 to ED50 is less than 1 d) The therapeutic dose approaches the toxic dose	**D**

9) Your lab group has been evaluating the effects of a new drug for the treatment of hiccups. When administered over a wide concentration range, three dose response relationships were defined in test subjects. What would be the estimated therapeutic index for each side effect? • 10 & 100  	
10) Two diuretic drugs have the same mechanism of diuretic action. Drug (A) in a dose of 5 mg produces the same magnitude of diuresis as 500 mg of drug (B). This suggests that: a. Drug (B) is less efficacious than drug (A). b. Drug (A) is about 100 times more potent than drug (B). c. Drug (A) is a safer drug than drug (B). d. Drug (A) will have a shorter duration of action than drug (B).	**B**
11) A drug that binds to a receptor and produces a biological response that mimics the response to the endogenous ligand is known as: a) Agonist b) Antagonist c) Functional antagonist d) Partial antagonist	**A**

12) Which of the following describes an agonist? a. Any substance that brings about a change in biologic function through its chemical action b. A specific regulatory molecule in the biologic system where a drug interacts c. A drug that binds to a receptor and stimulates cellular activity. d. A drug that binds to a receptor and inhibits or opposes cellular activity	**C**
13) Which of the following statement is correct? a. If 10 mg of drug A produces the same response as 100mg of drug B, drug A is more effective than B b. The greater the efficacy the greater the potency of a drug c. In selecting a drug, potency is usually more important than efficacy. d. A competitive antagonist increases the ED50.	**D**
14) A new vasopressor in development, Drug X, is a partial agonist at a1 adrenergic receptors. Epinephrine is a full agonist at these same receptors. Which of the following statements is true regarding the potency of Drug X compared to epinephrine? a. Drug X and epinephrine are equally potent because they act on the same receptor b. Drug X is more potent because it is a partial agonist c. Epinephrine is more potent because it is a full agonist d. Relative potency cannot be determined from the information given	**D**

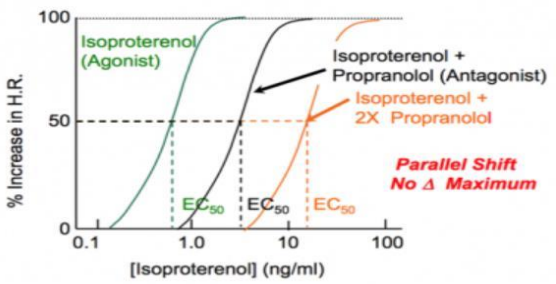
15) Isoproterenol-induced contraction of cardiac muscle acts in a manner like epinephrine. Which of the following best describes isoproterenol? a. Full agonist b. Partial agonist c. Competitive antagonist d. Irreversible antagonist	**A**
16) Dose response data was collected during the preclinical testing of four drugs for the treatment of acute heart failure, Which drug studied was the most : • Efficacious …… • Potent ….. 	**C & A**
17) Which of the following is true of receptor action of a drug: a) An antagonist has both efficacy and affinity for receptor b) An antagonist has affinity but no efficacy for receptor c) A partial antagonist has no efficacy or affinity for receptor d) An antagonist has affinity and efficacy	**B**

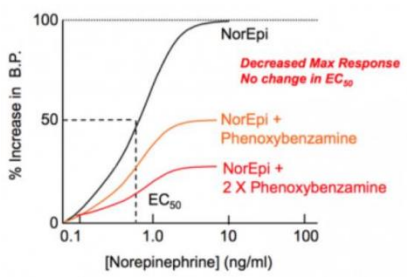
18) Which of the following Characters of non-competitive antagonists? a) Compete with the drug on the same site of receptor b) Alters the mechanism of action of an agonist c) Alters the potency of an agonist. d) Decreases the maximum response to an agonist.	**D**
19) Which of the following terms best describes the antagonism of Broncho constrictor effect of leukotrienes by bronchodilator terbutaline in a patient with bronchial asthma? a) Chemical antagonism b) Physical antagonism. c) Physiological antagonism. d) Competitive antagonism.	**C**
20) Drug X is a new drug that reverse the action of atracuronium; It appears to interact directly with the atracuronium molecule and muscle-relaxing agents Which of the following terms best describes drug X. a) Competitive antagonist. b) Non-competitive antagonist. c) Physiologic antagonist. d) Chemical antagonist.	**D**
21) Drug is said to be reversible antagonist when a) It blocks the receptors by making covalent bond with them b) The duration of blockade is too long c) Increasing the dose of the agonist will reverse the block d) Termination of the drug effect depends on synthesis of new receptors	**C**

22) Which of the following terms best describes the antagonism of Bronchoconstrictor effect of Histamine by bronchodilator adrenaline in a patient with bronchial asthma ? a) Physiological antagonism b) Physical antagonism. c) Competitive antagonism. d) Chemical antagonism	**A**
23) In the presence or naloxone. A higher concentration of morphine is required to elicit full pain relief. Naloxone by itself has no effect. Which or the following is correct regarding these medications? a) Naloxone is a competitive antagonist. b) Morphine is a full agonist. and naloxone is a partial agonist. c) Morphine is less efficacious than is naloxone. d) Morphine is less potent than is naloxone. e) Naloxone is non-competitive antagonist	**A**
24) Two drugs may act on same tissue or organ through independent receptors resulting effects in opposite reaction that known as: a) Competitive antagonism b) Chemical antagonism c) Non-competitive antagonism d) Physical antagonism	**D**

25) A drug that has both affinity and efficacy is called: a) Agonist b) Antagonist c) Partial agonist d) Carrier molecule	**A**
26) The ability of a drug to produce a response after binding to the receptor is called: a) Affinity b) Efficacy c) Potency d) Safety	**B**
27) The therapeutic index (TI) is the ratio between: a) Affinity and efficacy b) LD50 and ED50 c) Potency and safety d) Receptor and ligand	**B**
28) The therapeutic index (TI) is a measure of: a) Potency b) Safety c) Efficacy d) Affinity	**B**

29) Drugs with a high therapeutic index are considered: a) More potent b) More effective c) More safe for clinical use d) More specific to their target receptors	**C**
30) Potency refers to: a) The empathy of the receptor to the ligand b) The number of receptors occupied by the drug c) The ability of a drug to produce a response after binding to the receptor d) The dose of the drug that gives 50% of the maximal response	**D**
31) Which terms best describes antagonist that interacts directly with agonist and not at all with the receptor? a) Physiologic antagonist b) Partial agonist c) Pharmacologic antagonist d) Chemical antagonist	**D**
32) Which of the following terms best describes a drug that blocks the action of epinephrine at its receptors by occupying those receptors without activating them? a) Physiologic antagonist b) Pharmacologic antagonist c) Partial agonist d) Chemical antagonist	**B**

33) Drugs with a low therapeutic index are considered: a) More potent b) More effective c) More safe for clinical use d) More likely to cause toxicity	**D**
34) Select the term that illustrate a reduction in drug efficacy (type of drug interaction, physical interactions): a) Heparin and protamine b) Adrenaline and his amine **c)** Penicillin and gentamicin. **d)** All of the above	**A**
35) Two drugs may act on some tissue or organ through independent receptors resulting effects in opposite reaction that known as: a) Competitive antagonism b) Non-competitive antagonism c) Chemical antagonism **d)** Physiological antagonism	**D**
36) This graph illustrates the dose response relationship for the effect of the isoproterenol beta agonist on an isolated perfused heart. both alone and in the presence of different field concentrations of Drug X. Based upon the data shown. Drug X IS MOST LIKELY: a. full agonist b. Reversible antagonist c. Irreversible antagonist d. Partial agonist 	**B**

37) This graph shows the concentration dependent effects of norepinephrine on arterial blood pressure, both alone, and in the presence of a fixed concentration of Drug X. Which type of antagonist is drug: a) Silent b) Reversible antagonist c) Irreversible antagonist d) Inverse agonist  	**C**
38) Antagonism occurs when: a) The combined effect of two drugs is greater than the sum of their individual effects b) One drug abolishes the effect of the other c) The effect of one drug is greatly increased by intake of another drug d) The combined effect of two drugs is equal to the sum of their individual effects	**B**
39) Which type of antagonism occurs when the antagonist binds to the same site of the agonist on the receptor? a) Competitive antagonism b) Non-competitive antagonism c) Pharmacological antagonism d) Physiological antagonism	**A**

40) Chemical antagonism occurs when: a) The combined effect of two drugs is greater than the sum of their individual effects b) One drug abolishes the effect of the other c) Two drugs produce opposite effects by activation of different receptors d) One acidic drug when added to a basic drug causes precipitation of each other's	**D**
41) Non-competitive antagonism occurs when: a) The antagonist binds to the same site of the agonist on the receptor b) The antagonist binds to another site on the receptor and prevents the action of the agonist c) The combined effect of two drugs is greater than the sum of their individual effects d) The effect of one drug is greatly increased by intake of another drug	**B**